

'ERUDITE'
2025-26

ISBN 978-81-951719-3-4

Two Days
Virtual Multi-Disciplinary
National Conference

25th & 26th February 2026
Wednesday & Thursday

*Ideas
Insights
Innovations
for a Better Tomorrow*



CONFERENCE PROCEEDINGS

Chief Editor
Dr. Vidya Shivannavar



SESHADRIPURAM EDUCATIONAL TRUST

SESHADRIPURAM INSTITUTE OF COMMERCE AND MANAGEMENT

(Permanently Affiliated to Dr Manmohan Singh Bengaluru City University)

NAAC Accredited 'A' Grade.

39 & 40, Girls' School Street, Seshadripuram, Bengaluru - 560020

Ph : 080-22955382 | Web : www.sicm.edu.in

KNOWLEDGE
DIVERSITY
PROGRESS

ISBN 978-81-951719-3-4



**Two Days Virtual Multi-Disciplinary National Conference
2025-26**

Conference Proceedings

Chief Editor

Dr. Vidya Shivannavar

Organizing Committee

Prof. Asha G

HOD in Kannada

Prof. Dilip Kumar Yadav

HOD in Hindi

Mr. Ravikumar M

Librarian

Dr. Punitha G

HOD in Commerce

Asst. Prof. Roopa H R

HOD in Computer Applications

Dr. Amar H. A

Program Head, Management

Assoc. Prof. Bhuvaneshwari.R.S

HOD in English

Capt. Chikkarangaswamy.R

Physical Education Director

Dr.Kavitha.B

HOD in Sanskrit

25th & 26th February 2026, Wednesday & Thursday

Chief Editor

Dr. Vidya Shivannanavar

Editors

Dr Pramod A V

Dr. Shilpashree M C

Asst. Prof Manasa V

All rights reserved.

First Print : 2026

The copyright of this publication is vested solely with the author. No part of this publication maybe reproduced or transmitted in any form or by any means without the prior written permission of the author and the publisher. Any person who does any unauthorized act in relation to this publication shall be liable to criminal prosecution and civil claims for damages.

The views expressed in this book are those of the author and not necessarily of the editors/publishers. The editor/publisher is not responsible for the views of the author of the data, in any way what so ever.

978-81-951719-3-4

© Authors

PREFACE

Seshadripuram Institute of Commerce and Management is one of the most prestigious colleges under the flagship of Seshadripuram Educational Trust. It offers UG courses for nearly 1,140 students which aims at providing quality education with the motto of "Inspiring Possibilities".

"ERUDITE" represents profound knowledge, scholarly and intellectual abilities. Its propensity is to cultivate sound knowledge and to ambulate towards progression. ERUDITE - the annual Multi-Disciplinary National Conference strives to bring all the scholarly knowledge from different disciplines to enrich and enlighten the research fraternity.

The College has transcended conference's theme from solo discipline to Multi discipline and has included the Languages - English, Kannada, Hindi, Sanskrit, and the Department of Computer Science, Library and Sports too. ERUDITE 2026 was an effort to unify the researchers and academicians from all the various departments. The Multi-Disciplinary National Conference took place on 25th & 26th February 2026 in virtual mode. The conference was inaugurated by the Chief Guest: Prof. Ramesh B. Honourable Vice Chancellor, Dr. Manmohan singh Bengaluru City University. Mr. Mohammed Azzan Patni, CEO and founder Koala AI Solutions Pvt. Ltd. was invited as the Keynote speaker and Presided by Nadoja Dr. Wooday P. Krishna, Honorary General Secretary, Seshadripuram Educational Trust.

This platform brought all the scholars, academicians, researchers and professionals from across the nation. They articulated their ideas and explored the recent developments in the respective areas of Commerce, Management, Computer Science, English, Kannada, Hindi, Sanskrit, Library and Physical Education. This compilation is a collective effort of all the departments, organizing secretaries and the best articles are put together in this proceeding for the benefit of posterity.

We would like to take this opportunity to thank all the faculties, research scholars, resource persons and students who had actively participated and contributed to the success and significance of the conference.

Chief Editor
Dr. Vidya Shivannanavar
Principal,
SICM



Seshadripuram Educational Trust

SESHADRIPURAM INSTITUTE OF COMMERCE AND MANAGEMENT

(Permanently Affiliated to Dr Manmohan Singh Bengaluru City University)

NAAC ACCREDITED 'A' GRADE

**#39 & 40, Girls' School Street, Seshadripuram, Bengaluru - 560020 Ph. : 080 - 22955382 | www.sicm.edu.in
Organized**

TWO DAYS VIRTUAL MULTI-DISCIPLINARY NATIONAL CONFERENCE

2025-26

Conference Proceedings

CONFERENCE STREAMS

Department of the Commerce

Department of the Management

Department of the Kannada

Department of the Hindi

Department of Library Sciences

Department of the English

Department of the Sports

Department of the Sanskrit

Department of the Computer Applications

25th & 26th February 2026, Wednesday & Thursday

CONFERENCE COMMITTEE

Chief Patrons

Shri N R Pandith Aradhya President	Shri T S Henjarappa Vice-President	Shri W H Anil Kumar Vice-President
Shri S Sheshanarayana Honorary Joint Secretary	Shri M S Nataraj Honorary Assistant Secretary	Shri B M Parthasarathy Honorary Treasurer

Patrons

Nadoja Dr. Wooday P Krishna Honorary General Secretary	Dr. Vidya Shivannavar Principal
--	---

Organizing Committee

Prof. Asha G

HOD in Kannada

Prof. Dilip Kumar Yadav

HOD in Hindi

Mr. Ravikumar M

Librarian

Dr. Punitha G

HOD in Commerce

Asst. Prof. Roopa H R

HOD in Computer Applications

Dr. Amar H. A

Program Head, Management

Assoc. Prof. Bhuvaneshwari.R.S

HOD in English

Capt. Chikkarangaswamy.R

Physical Education Director

Dr.Kavitha.B

HOD in Sanskrit

Conveners

Dr. Pramod A V

Department of Commerce & Management

Dr. Shilpashree M C

Department of Commerce & management

Asst. Prof. Manasa V

Department of Commerce & management



REPORT OF THE CONFERENCE

The inauguration for the National Conference Erudite: 2026: AI Conduit: Its Opportunities and Challenges began with an official commencement by the President of the inaugural session Nadoja Dr Wooday P Krishna, Honorary secretary Seshadripuram Educational Trust. The brief about the conference was read out by Assistant Professor Manasa V, Department of the Commerce and the Convener of the conference. Her brief note covered how the National Conference began in the year 2017 restricted to the stream of Commerce and Management. In the second subsequent year the college expanded itself into a multi disciplinary National Conference involving all the departments, with covid-19 restrictions the conference was shifted to online mode titled as Erudite. Since then the conference shifted to online mode, considering the expansion in participation. The current year conference title as AI conduit it's opportunities and challenges challenges was roled out officially on 19th December 2025 with the preparation of brochure and designing a policy for National Conference. In total we have 162 registrations under 9 different disciplines. With the total paper count of 136 and 177 participants.

Principal Dr Vidya Shivannavar welcome the gathering by exponentially covering the profiles of various dignitaries present in the virtual platform, in her address she also briefed out about the various activities that were taken up by the college in conducting this conference and thank to the contribution of each and everyone by officially welcoming them to the virtual conference. Mam also gave the Due credit to all the track judges and the budding reserachers who have prepared the research paper and would be presenting in the next 2 days which opens up the discussion on the underline topic of artificial intelligence.

Chief guest Professor Ramesh B, Honorable Vice Chancellor, Dr Manmohan Singh Bengaluru City University address the gathering by classifying his 15 minute talk into three categories of ethical requirements for AI utilisation, upliftment of Curriculum in line with AI requirement and security issues in line with compliance, sir highlighted the categories of ensuring reduction in digital literacy and also urged the need for venturing into the technology by considering the rural masses of the country. He also stressed up on the reduction of the job is not the actual change but the modern day

people have to work with the machines, Sir also highlighted about the need for physical teachers even besides application of AI Technology and insisted that Technology should act only as a support and never dominate the role of a teacher, he also urged about the need for taking care of complaints with regard to the various Cyber crimes associated with the senior citizens and also suggested that Technology blending should not be at the cause of human understanding and Exploration should never be at the cost of environmental Technology should never increase the pressure instead it has to give necessary pleasure. He finally concluded by thanking the management of the college for inviting him as the chief guest.

The keynote speaker Mr Mohammed Azzan Patni, CEO and founder Koala AI Solutions Pvt Ltd. Kept his 15 minute address very professional and restricted to the theme he quoted the example of how Electronic Mails decides on which has to be regular mail and which has to be in spam and give a beautiful Introduction by comparing artificial intelligence technology of today, with the introduction of electricity in the early part of 19th century. The speaker being an engineer himself spoke about blending of algorithms and how it gets activated because of human intelligence showing interest in viewing the same. The speaker insisted on emergence of new programs under prompt engineering and also highlighted the academic Centricity with the application of Artificial Intelligence, he also stressed on that AI will create more jobs as we go on with the utilisation of Technology. Mr Azzan also spoke about the need for proper Governance of usage in AI and also a broader policy to ensure that it is not misused at all levels. He also spoke about key opportunities and evolution of new jobs which gets more into the application side rather than just consumption side of Technology. In his completing remarks, he has taken a leap from campus to career with artificial intelligence with clear segregation of action based on these courses as the need of the hour to be taken up by the academic Endeavour. He concluded with a thank to the management for inviting him to be the key note addressee of the conference.

The formal vote of thanks was given by Assoc Prof Pramod A V, Convenor of the Conference to bring down the curtains to the inauguration and the Master of Ceremony to the Complete session was Dr Shilpashree M C, Convenor of the Conference.

Themes and Sub-Themes of the Conference were as follows:

AI CONDUIT: IT'S OPPORTUNITIES AND CHALLENGES

Sub Themes for the Conference

Department of the Kannada

ಕೃತಕಬುದ್ಧಿಮತ್ತೆ (ಽ)ಮತ್ತು ಭಾಷಾ ತಂತ್ರಜ್ಞಾನ

ಕೃತಕಬುದ್ಧಿಮತ್ತೆ (ಽ) ಮತ್ತು ಕನ್ನಡ ಸಾಹಿತ್ಯ

ಕೃತಕಬುದ್ಧಿಮತ್ತೆ(ಽ) ಮತ್ತು ಕನ್ನಡ ಕಾವ್ಯ ಲೋಕ

ಕೃತಕಬುದ್ಧಿಮತ್ತೆ (ಽ) ಮತ್ತು ಕನ್ನಡ ಕಥೆಗಳು

ಕೃತಕಬುದ್ಧಿಮತ್ತೆ (ಽ)ಮತ್ತು ಕನ್ನಡ ನಾಟಕಗಳು.

ಆಜರಿಸಿಡಿಗಟಜಟಿಗ ರಜಿ ಣಜ ಉಟಿಜು

हिंदी भाषा के शिक्षण में नई संभावनाएँ

शोध कार्य में सहयोग

हिंदी भाषा का डिजिटल विस्तार

शिक्षा जगत को वास्तविक दुनिया से जोड़ना

हिंदी में समावेशी शिक्षा का निर्माण

ಆಜರಿಸಿಡಿಗಟಜಟಿಗ ರಜಿ ಣಜಿಡಿಡಿಡಿ ಖಫಿಜಟಿಫಿಜಿ

AI-driven digital transformation of academic libraries

AI-driven user-centric library services

Smart libraries using AI, RFID, and IoT

AI-based discovery tools and smart search systems

Digital repositories and open access platforms

Department of the Commerce

AI for smarter financial decision making

Ethics and transparency in AI driven finance, marketing and accounting

Opportunities and application of AI in accounting, finance and economics

AI Governance and its applicability

Role of AI in financial models for sustainable social enterprise.

Department of the Management

AI in strategic Management

AI in functional areas of Management

AI in Entrepreneurship and Innovation

AI in organisational Behaviour and Leadership

AI in knowledge Management and MIS

Department of the English

AI-Supported English Classrooms: Pedagogical Opportunities and Limitations

Redefining Teacher and Student Roles in AI-Enabled Teaching–Learning Environment

AI, Ethics, and Academic Writing: Integrity and Accountability

Generative AI in Writing and Research: Practices and Possibilities

AI as a Futuristic Tool for Creative Writing

Department of the Sports

AI in fitness monitoring

AI in Programmed Exercises

AI in Concentration Mapping

AI in Customisation of Sports Discipline

AI in data analytics in sports

Department of the Sanskrit

संस्कृताध्ययनाय-अध्यापनाय च कृत्रिमबुद्धेः उपयोगः ।

कृत्रिमबुद्ध्या संस्कृतग्रन्थानां संरक्षणं, अङ्कीकरणञ्च ।

कृत्रिमबुद्धि-साहाय्येन संस्कृतग्रन्थानाम् अनुवादाः, व्याख्या च ।

संस्कृताध्ययनेषु, शोधकार्येषु च कृत्रिमबुद्धेः नैतिकोपयोगः ।

संस्कृताध्ययनस्य भविष्यं तथा कृत्रिमबुद्धिश्च ।

Department of the Computer Applications

Interdisciplinary AI Applications

Human-Centered AI Systems

Advanced AI Algorithms

Sustainable & Smart AI Computing

Ethical & Secure AI Systems

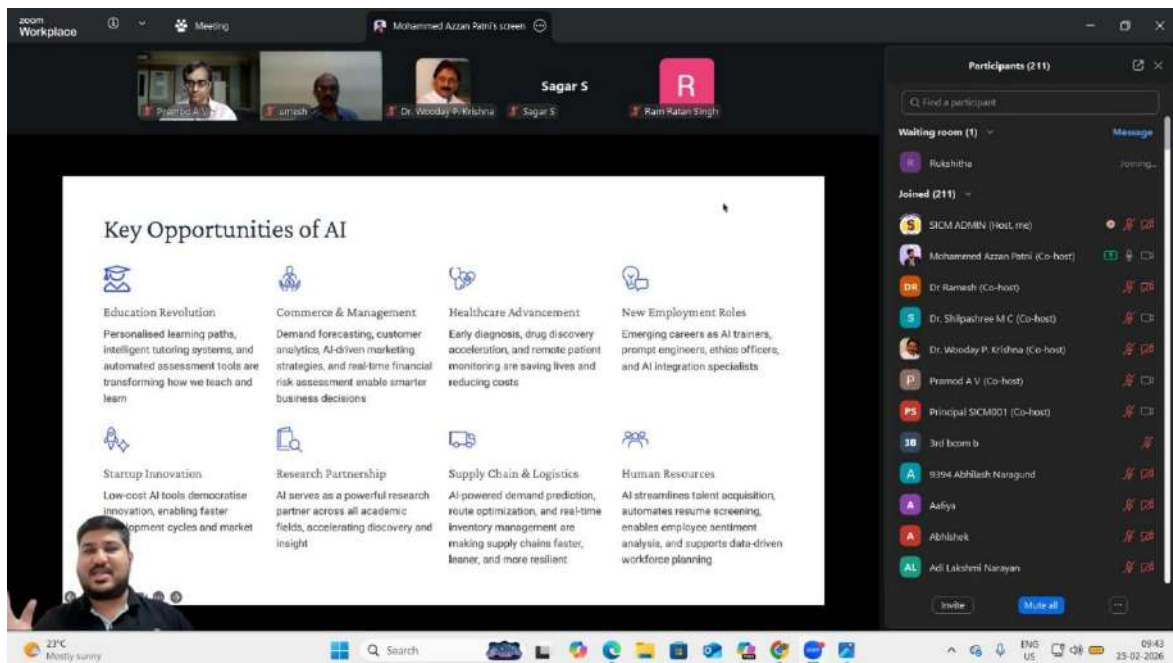
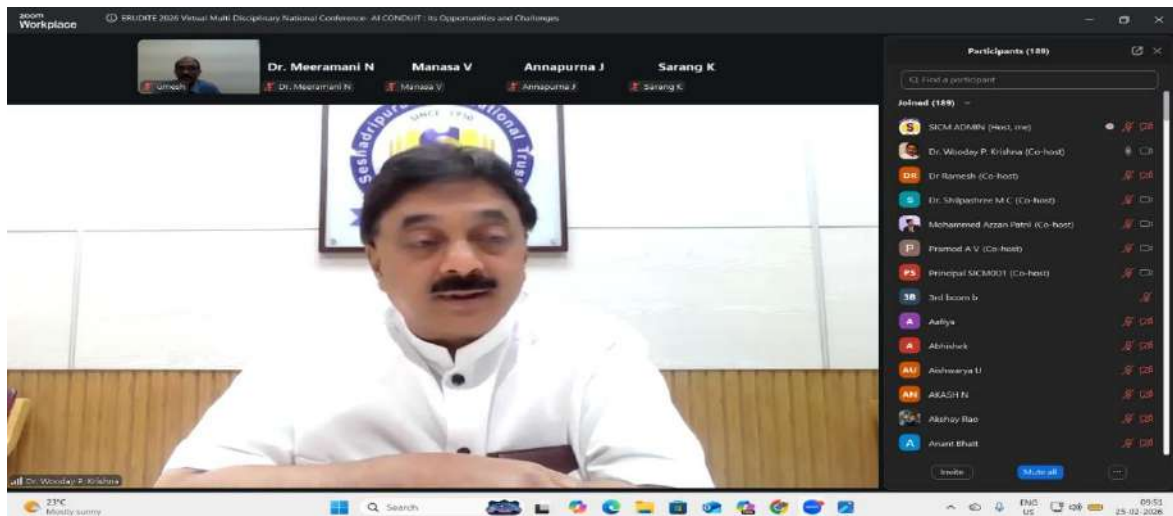
The details of Resource persons and Rapporteurs are as follows:

SL NO	DISCIPLINES	Resource Person	Rapporteurs
1	Department of Kannada	Dr. Sheela Devi S Malemutt Retired Principal Basaveshwara College	Poornima B K
2	Department of Hindi	Prof Ram Ratan Singh Retired Professor Patna, Bihar	Swathi N
3	Department of Library Sciences	Dr. Meeramani N Librarian JAIN (Deemed-to-be University)	Annapurna J
4	Department of Commerce	Dr. Vijayakumar R. S. Associate professor Nagarjuna Degree College	Shilpa C S

4		Department of Commerce	Dr Nagendra B M Dean of Commerce ASC Degee College	Akarsh Kumar Singh
5	Department of Management	Dr. Krithika Raj Associate Professor Seshadripuram PG Department of Management	Poojetha H	
6	Department of English	Dr Vijaya Supriya Samnoel, Assistant Professor REVA University	Prabhanjan N	
7	Department of Sports	Lt.R. Saravanan Physical Education Director and Assocaite NCC Officer Global Academy of Technology	Neela Monnappa	
8	Department of Sanskrit	Dr. Satish Devaru Hedge HoD of Sanskrit NMKRV PU College	Sundaresh M	
9	Department of Computer Applications	Dr Sajini G Associate Professor MSRIT	Chethan R	

Snapshots of the National Conference





INDEX

SL NO	NAME OF THE STUDENT AUTHOR 1	TITLE OF THE PAPER	PAGE NUMBERS
1	Rajatha M, Neha Banu and Santosh D Bendigeri	Adoption of Artificial Intelligence in Financial Management: Evidence from Emerging-Market Firms in India	1
2	Mrs. Bharathi S and Ms. Rithika S	Artificial Intelligence in Education: An Empirical Analysis of Its Influence on Students' Engagement	18
3	Dr Sri Hari, Jagadish A and Santosh D Bendigeri	Consumer Trust in AI-Powered services and Its Impact on Purchase Intention: An Empirical Study	26
4	Ms Venila B and Dr R Parvathi	Smart Classroom and Smarter Pedagogy: The Impact of AI on English Teaching	43
5	Manjunatha G L, Reshmasudan N and Gowtham H S	Connecting Artificial Intelligence with Pedagogy: An Adaptive Learning System Model with a Human-Centered Teacher-in-The- Loop	52
6	Sathisha S and Sundaresh M	A Study on The Impact of AI Monitoring on Mental Well-being and Job Satisfaction.	56
7	Chandana S M	An analytical study on topline accounting data analysis using AI	73
8	Bhoomika H, Bhramarasree S and Rishabh S Karnad	AI in Functional areas of Management: Applications of AI Across Functional Areas of Management	82
9	Samhita M and Yashaswini L	AI in Strategic Management- It's Impact on Employee Productivity in Karnataka	93
10	Karthick.K, Ravikumar M and Rashmi N	A Study on the role of Artificial Intelligence in urban UG colleges in Bengaluru City	103

11	Samhita M	The Evolution of English Creative Writing in the Age of Artificial Intelligence	109
12	Sahana. N	संस्कृताध्ययनाय-अध्यापनाय च कृत्रिमबुद्धेः उपयोगः	118
13	Venkatesh M and Prarthana S	Gender Equality - " Gender - Equitable Mindsets among Youth "	124
14	Sahana. N	Unveiling of Bharateeya Education System and development	134

Adoption of Artificial Intelligence in Financial Management: Evidence from Emerging-Market Firms in India

Rajatha M
Assistant Professor
SSMRV College, Bengaluru, India
Email: rajatha.ssmrv@rvei.edu.in

Neha Banu
Assistant Professor
SSMRV College, Bengaluru, India
Email: nehabanu.ssmrv@rvei.edu.in

Santosh D Bendigeri
Assistant Professor,
SSMRV College, Bengaluru, India
email: santoshdb.ssmrv@rvei.edu.in

Abstract

Purpose

This paper looks at a practical problem many firms seem to be facing. Artificial intelligence is entering financial work, though often in quiet ways, and it is not always clear how it actually fits into day-to-day tasks. The study focuses on how people working with finance experience this shift, especially in Indian firms where routines, resources, and expectations can differ widely. It tries to move away from abstract claims and stay closer to ordinary financial work, such as checking figures before a meeting or reviewing alerts at the end of the day.

Design/Methodology/Approach

The study follows a survey-based approach, gathering views from people directly involved in financial management. The focus stays on current practice rather than long-term predictions. Analysis looks at patterns between artificial intelligence use, organisational readiness, and perceived financial outcomes, keeping the methods simple and transparent.

Findings

The results suggest that artificial intelligence use is linked with smoother financial work in many cases. Organisational readiness also seems to matter. When both are present, outcomes appear to line up more comfortably, though changes tend to be modest rather than dramatic.

Originality/Value

The paper adds value by grounding artificial intelligence discussion in everyday financial

behaviour. It offers insight from an emerging-market setting and highlights how progress often unfolds through small, practical adjustments rather than sweeping change.

Keywords: artificial intelligence, financial management, organisational readiness, emerging-market firms, decision-making

1. Introduction

1.1 Background of the Study

Across Indian businesses, financial work has been changing in ways that are easy to miss. Much of it happens in quiet moments rather than strategy meetings. A manager glances at a forecast while waiting for a cab. Someone else reviews a flagged transaction late in the evening, phone in hand. In many firms, these actions are now shaped by systems that draw on artificial intelligence, even if staff rarely talk about it in technical terms.

Academic work has followed this shift, though often from a distance. A large body of research maps how artificial intelligence is spreading across finance, tracing applications in forecasting, fraud detection, reporting, and risk assessment (Goodell et al., 2021). Reviews suggest that interest has moved well beyond experimentation, with firms increasingly relying on automated outputs in day-to-day financial decisions (Bahoo et al., 2024). Yet the lived reality inside organisations appears less settled. For some teams, AI tools sit alongside spreadsheets and judgement calls rather than replacing them entirely.

There is also a sense of tension in how these systems are trusted. Research has shown that AI outputs often depend on earlier human assumptions, labels, and routines, which can quietly shape what appears objective or precise (Lebovitz et al., 2021). In practice, finance staff may accept a recommendation because it arrives quickly, or because it looks clean, even when they are unsure how it was produced. This matters in contexts like Indian firms, where resources, skills, and institutional support vary widely across sectors and regions.

Studies from banking and financial markets highlight broader concerns around risk and concentration, particularly when many organisations rely on similar models or data sources (Danielsson et al., 2022). At the same time, work on management and accounting suggests that AI is subtly reshaping professional roles, altering what counts as expertise and where responsibility is felt (Moll et al., 2021). These shifts are not always smooth. They unfold through trial, hesitation, and uneven uptake, shaped by budgets, habits, and local pressures.

Much of the established theory on technology use still centres on perceptions of usefulness, ease, and readiness within organisations (Davis, 1989; Venkatesh et al., 2003; Parasuraman, 2000). These ideas remain helpful, though they were developed in settings quite different from contemporary emerging-market firms. In Indian businesses, AI adoption often takes place alongside patchy infrastructure, skill gaps, and strong reliance on informal judgement. Decisions may be influenced as much by who is available on the finance team as by what the system suggests.

1.2 Research Gap

Despite a growing literature on artificial intelligence in finance, several limitations remain. Many studies focus on technical performance or market-level outcomes, leaving everyday organisational use underexplored (Bahoo et al., 2024). Others rely heavily on data from advanced economies, where regulatory environments, digital maturity, and professional training differ markedly from those in emerging markets (OECD, 2025). As a result, it is not always clear how well existing explanations travel across contexts.

There is also a tendency to treat adoption as a single event rather than an ongoing practice. Reviews often describe whether AI is used, but pay less attention to how it becomes woven into routine financial work, or where it meets resistance or quiet workarounds (Goodell et al., 2021). Studies that do examine organisational adoption frequently privilege formal structures and stated strategies, which may overlook informal behaviour, partial use, or selective trust in outputs.

Conceptually, prior research often draws on established acceptance or innovation frameworks without fully integrating them with newer thinking on AI capability, organisational learning, and decision structures (Mikalef et al., 2022; Shrestha et al., 2021). This can limit explanatory depth. In some cases, AI is treated as a neutral tool rather than something that reshapes judgement, accountability, and everyday financial practice.

Most importantly, empirical evidence from Indian firms remains limited. Existing work rarely captures how finance professionals in emerging-market organisations experience AI in practical terms, such as managing cash flow under uncertainty or responding to automated risk alerts with limited time. These contextual gaps suggest the need for closer, grounded examination.

1.3 Research Objectives

1. To examine the extent to which artificial intelligence is used in routine financial management activities within Indian firms.

2. To understand how finance professionals perceive the usefulness and ease of use of artificial intelligence in their day-to-day financial work.
3. To assess the level of organisational readiness for adopting artificial intelligence in financial management functions.
4. To analyse how the adoption of artificial intelligence relates to perceived financial management outcomes, including decision quality, efficiency, and risk handling.

Research Contributions

This study contributes to existing scholarship in several ways. Theoretically, it brings together established technology acceptance ideas with more recent work on AI capability and organisational decision-making, applying them in a context that remains underrepresented. Empirically, it offers firm-level evidence from Indian businesses, capturing how AI is used in ordinary financial tasks rather than abstract settings. Contextually, it sheds light on adoption patterns shaped by uneven resources, skills, and expectations, extending current understanding beyond advanced economies.

Rather than presenting AI as a finished solution, the study highlights how it seems to settle into financial work gradually, through use, doubt, and adjustment. In doing so, it adds texture to ongoing academic conversations about technology, judgement, and everyday organisational life.

2. Literature Review and Hypothesis Development

2.1 Conceptual and Theoretical Foundations

Much of what we know about technology use in organisations comes from studies that focus on how people decide whether to use a system at all. Over time, these ideas have been applied again and again, often in new settings. Early work suggested that people tend to rely on tools they find useful and easy to handle in the middle of a working day, especially when there is pressure to move quickly (Davis, 1989). Later models widened this view, pointing out that social expectations, support from managers, and available infrastructure also shape whether a system becomes part of routine work (Venkatesh et al., 2003).

These ideas still seem relevant when thinking about artificial intelligence in financial management. AI systems often sit alongside existing software rather than replacing it. A finance manager might glance at an automated forecast, then open a spreadsheet out of habit. Whether the AI is trusted often depends less on technical detail and more on how it fits into the flow of

work. Some studies suggest that readiness within the organisation plays a quiet role here. When firms have supportive leadership, basic technical capacity, and staff who feel comfortable experimenting, new systems seem to settle in more easily (Parasuraman, 2000).

More recent work has tried to move beyond individual acceptance to look at organisational capability. From this view, AI use depends on how data, skills, and routines are brought together over time (Mikalef et al., 2022). This perspective matters in emerging-market settings, where firms often work with uneven resources and shifting priorities. Theoretical work on decision structures also reminds us that AI does not simply provide answers. It changes who feels responsible for decisions and how judgement is shared between people and systems (Shrestha et al., 2021).

Together, these strands suggest that AI adoption, organisational readiness, and financial outcomes are linked through everyday practices rather than abstract systems.

2.2 Artificial Intelligence Adoption and Financial Management Outcomes

A growing body of research has looked at how artificial intelligence is used across financial activities. Much of this work maps applications such as forecasting, fraud detection, reporting, and risk analysis (Goodell et al., 2021). The general picture suggests that AI can support faster processing and pattern recognition, especially where large volumes of data are involved.

At the same time, studies hint that outcomes depend on how AI is actually used. In some firms, automated alerts help staff notice issues early, perhaps while checking figures on a phone before a meeting. In other cases, outputs are ignored or double-checked manually. Reviews of AI in finance suggest that performance gains are uneven and often tied to organisational context rather than the technology itself (Bahoo et al., 2024).

There are also concerns about over-reliance. Research on systemic risk notes that when many organisations use similar models, small errors or biases can spread quietly across systems (Danielsson et al., 2022). At the firm level, this raises questions about how much trust finance professionals place in AI recommendations, particularly when time is short or information is incomplete.

What seems less explored is how finance staff in emerging-market firms experience these tools in day-to-day work. Much of the existing evidence comes from large financial institutions or market-level data. Less attention has been paid to how AI adoption relates to perceived improvements in routine financial management, such as budgeting accuracy or decision speed, within diverse organisational settings.

Based on this literature, it seems reasonable to expect a relationship between AI adoption and financial management outcomes, though the strength of this relationship may vary.

2.3 Organisational Readiness and Financial Management Outcomes

Alongside adoption itself, organisational readiness appears to shape how technology affects outcomes. Readiness reflects whether a firm has the support, skills, and basic conditions needed to make use of new systems. Some researchers argue that even well-designed tools struggle to deliver value when staff feel unsure, undertrained, or unsupported (Parasuraman, 2000).

Empirical studies suggest that management support plays a role here. When leaders encourage experimentation and allow time to learn, employees seem more willing to rely on new tools. In contrast, where AI is introduced quietly or without explanation, staff may use it only superficially. Work on management accounting shows that AI can change roles and expectations, sometimes creating uncertainty about responsibility and judgement (Moll et al., 2021).

In emerging-market firms, readiness may be uneven across departments. A finance team might have access to an AI-based reporting tool but limited data quality or patchy integration with other systems. Some studies note that research often assumes a level of organisational maturity that does not hold in many real settings (OECD, 2025).

Despite this, organisational readiness is often treated as a background factor rather than examined directly. There is limited firm-level evidence showing how readiness relates to perceived financial outcomes, especially outside advanced economies. This leaves open questions about whether readiness itself contributes to better financial management, regardless of how extensively AI is used.

2.4 Integrated Conceptual Perspective

Looking at AI adoption or organisational readiness in isolation may miss how these factors work together. One view suggests that AI tools need a certain level of readiness to be used meaningfully. A forecasting system may exist, yet without skills or support, its outputs remain unused. At the same time, readiness without actual use offers little benefit. Training programmes and supportive policies do not improve decisions on their own.

Some scholars argue that AI creates value when technical use and organisational conditions align in everyday practice (Mikalef et al., 2022). This alignment is not always planned. It develops gradually, through trial, adjustment, and sometimes frustration. A finance manager

might start by using AI outputs as a second opinion, then slowly rely on them more as confidence grows.

Conceptual work on AI and management points out that this joint influence shapes how decisions are made and shared (Raisch & Krakowski, 2021). In this sense, adoption and readiness act together rather than separately. Their combined presence seems more likely to support consistent financial outcomes.

2.5 Hypothesis Development

Drawing on the above discussion, this study proposes that artificial intelligence adoption and organisational readiness jointly influence financial management outcomes. When AI is used more extensively within financial tasks, and when organisational conditions support its use, finance professionals may perceive improvements in decision quality, efficiency, and risk handling.

H1: Artificial intelligence adoption in financial management is positively related to perceived financial management outcomes.

H2: Organisational readiness for artificial intelligence is positively related to perceived financial management outcomes.

H3: Artificial intelligence adoption and organisational readiness jointly have a positive relationship with perceived financial management outcomes.

3. Methodology

3.1 Research Design

This study followed a quantitative research design, using a cross-sectional survey to examine how artificial intelligence is used in financial management within Indian firms. The design suited the aim of identifying patterns across organisations rather than focusing on individual cases. It allowed responses to be gathered from people who work closely with financial data and decisions as part of everyday routines.

The focus stayed on current practices. Many financial tasks now happen in short moments during the day, such as checking a report between meetings or responding to an automated alert late in the evening. A survey approach made it possible to capture these experiences at a single point in time, without asking respondents to reflect too deeply on abstract ideas.

This design also aligned with the analytical objectives of the study. It supported the examination of relationships between artificial intelligence adoption, organisational readiness, and financial management outcomes in a way that remained grounded in routine work experience.

3.2 Sample and Data Collection

The final sample consisted of 135 respondents drawn from Indian firms operating in different sectors, including manufacturing, services, IT-enabled services, retail, and financial services. Respondents held roles such as finance manager, accounts manager, senior manager, business owner, or similar positions involving responsibility for financial activities.

A purposive sampling approach was used. Participants were selected based on their involvement in financial management rather than their job title alone. In practice, respondents were reached through professional networks, LinkedIn contacts, and referrals within organisations. In a few cases, participants shared the survey with colleagues who met the study criteria, which helped broaden the sample.

Data were collected using an online questionnaire. This format allowed respondents to complete the survey at a time that suited their work patterns. Some may have responded during office hours, while others may have done so while travelling or after finishing daily tasks. Participation was voluntary, and respondents were informed that the study was for academic purposes only. No identifying information was collected.

After removing incomplete responses, 135 usable questionnaires remained for analysis. This sample size was considered adequate for the statistical techniques used, allowing for reliable estimation of relationships between key variables.

3.3 Measurement Instruments

The questionnaire included items measuring artificial intelligence adoption, organisational readiness, and financial management outcomes. All items were rated using a five-point Likert scale, ranging from strongly disagree to strongly agree.

Artificial intelligence adoption was captured through questions on the extent to which AI tools were used in routine financial tasks such as forecasting, reporting, cash flow monitoring, and risk assessment. The focus remained on actual use rather than awareness or intention.

Perceived usefulness and ease of use were measured using adapted items from established technology acceptance studies, with wording adjusted to reflect everyday financial work.

Organisational readiness was measured through items relating to management support, availability of skills, and basic technological infrastructure.

Financial management outcomes reflected respondents' perceptions of changes in decision speed, accuracy, cost control, and risk handling since using AI-based tools. These items aimed to capture practical effects rather than formal performance metrics.

Reliability was assessed using Cronbach's alpha. The values obtained suggested acceptable internal consistency across the main constructs. Construct validity was examined by reviewing correlations among related variables, which followed expected patterns.

3.4 Data Analysis Techniques

Data analysis was conducted using **Jamovi**. The process began with descriptive statistics to summarise demographic characteristics such as industry, firm size, and respondent role. This provided a basic picture of the sample.

Reliability analysis was then carried out to check the consistency of the measurement scales. Correlation analysis followed, offering an initial view of how artificial intelligence adoption, organisational readiness, and financial management outcomes were related.

Regression analysis was used to test the proposed hypotheses. Artificial intelligence adoption and organisational readiness were entered as independent variables, with financial management outcomes as the dependent variable. This allowed their individual contributions to be examined in simple terms.

Throughout the analysis, results were interpreted cautiously. The findings reflect perceptions reported by respondents rather than objective system performance. The emphasis remained on understanding patterns that seem to shape everyday financial management work within Indian firms.

4. Results

4.1 Demographic Profile

The analysis draws on 135 respondents who work with financial matters in Indian firms. They came from services, IT-enabled services, manufacturing, retail, and financial services. No single sector crowded out the rest. This helped keep the results from leaning too heavily in one direction.

Firm size varied. Some respondents worked in small setups where finance tasks are handled by a few people. Others came from larger firms with dedicated finance teams and formal systems. Roles included finance managers, accounts managers, senior managers, and business owners. Everyone dealt with money decisions as part of ordinary work, such as approving expenses or checking balances before the day ends.

Most respondents described their firm's digital use as moderate. A smaller group felt their organisations were highly digital. Very few placed themselves at the low end. This mix shaped how people talked about using AI in daily tasks.

Table 1

Demographic Profile of Respondents (N = 135)

Variable	Category	n	%
Industry	Services	38	28.1
	IT / ITES	34	25.2
	Manufacturing	29	21.5
	Retail	18	13.3
	BFSI	16	11.9
Firm Size	< 50 employees	31	23.0
	50–249	37	27.4
	250–999	34	25.2
	1000+	33	24.4
Digitalisation Level	Low	27	20.0
	Moderate	66	48.9
	High	42	31.1

4.2 Descriptive Statistics

Artificial intelligence adoption sat above the midpoint of the scale. This suggests AI tools were present in many firms, though not woven into every task. Some respondents used AI regularly for forecasting or reporting. Others relied on it mainly when something looked off, like an unusual transaction picked up late in the evening.

Organisational readiness stayed near the middle. Many respondents felt their firms were partly prepared. Support existed, though training and systems did not always feel settled.

Financial management outcomes were rated fairly positively. Decisions felt quicker for some people. Information felt clearer. Improvements appeared modest rather than dramatic.

Table 2

Descriptive Statistics

Variable	Mean	SD
AI Adoption	3.62	0.68
Organisational Readiness	3.51	0.69
Financial Management Outcomes	3.69	0.66

4.3 Reliability Analysis

Reliability checks showed the measures held together in a steady way. Items within each construct tended to move together. Respondents who rated AI use high in one area often did the same in others.

This suggested that answers were not random or rushed, even though many people likely completed the survey between tasks or while travelling.

Table 3

Reliability Statistics

Construct	Cronbach's α
AI Adoption	0.82
Organisational Readiness	0.83
Financial Management Outcomes	0.81

4.4 Correlation Analysis

Correlation analysis offered a first look at how things lined up. AI adoption and financial management outcomes moved in the same direction. Where AI use was higher, outcomes tended to be rated higher too.

Organisational readiness showed a similar pattern. Firms that felt more prepared often reported smoother financial work. AI adoption and readiness were also related to each other, which felt expected.

Table 4*Correlation Matrix*

Variable	1	2	3
1. AI Adoption	—		
2. Organisational Readiness	.48**	—	
3. Financial Management Outcomes	.52**	.46**	—

Note. ** $p < .01$.

4.5 Regression Analysis and Hypothesis Testing

Regression analysis was used to test the hypotheses. Financial management outcomes were treated as the dependent variable.

AI adoption came out as a positive predictor. As AI use increased, outcome scores tended to rise. The change felt steady rather than sharp.

Organisational readiness also mattered. Its effect was slightly smaller than AI adoption, though still noticeable. Firms that felt more ready often reported better outcomes, even when AI use was taken into account.

When both predictors were included together, neither dropped out. This supported the idea that AI use and readiness work alongside each other.

Table 5*Regression Results and Hypothesis Testing*

Hypothesis	Predictor	β	p	Decision
H1	AI Adoption → Financial Outcomes	.41	< .001	Supported
H2	Organisational Readiness → Financial Outcomes	.32	.002	Supported
H3	Joint effect of AI Adoption & Readiness	$R^2 =$.39	< .001	Supported

Note. H3 reflects the explanatory power of the combined regression model rather than an individual coefficient.

Overall, the results point to a simple pattern. Using AI seems to help more when the organisation feels ready for it. Readiness without use does little. Use without readiness feels

uneven. For many respondents, improvement arrived quietly, through small changes in how everyday financial work was handled.

5. Discussion

This study set out to understand how artificial intelligence fits into everyday financial work inside Indian firms. The results paint a picture that feels familiar rather than dramatic. AI seems to matter, though mostly in quiet ways. It shows up while checking a balance on the bus ride home or glancing at a forecast before a meeting starts. It does not appear to sweep aside older habits overnight.

One of the clearer patterns was the link between AI adoption and financial management outcomes. Firms where AI was used more often tended to report smoother financial work. Decisions felt quicker. Numbers felt easier to follow. This lines up with earlier work suggesting that AI supports routine financial tasks by handling volume and pattern recognition (Goodell et al., 2021). At the same time, the effect was steady rather than overwhelming. As far as respondents said, AI helped them work through tasks, not rethink their entire approach to finance.

Organisational readiness also came through as important. Firms that felt more prepared often described better outcomes. This seems to fit with earlier arguments around technology readiness and organisational support (Parasuraman, 2000). When management backing exists and systems mostly work, people appear more willing to rely on AI outputs. In a few cases, respondents hinted that without this support, AI tools stayed on the side, checked occasionally, then ignored when things got busy.

What stands out is how adoption and readiness worked together. When both were present, outcomes tended to look better. This fits with thinking that AI value emerges through everyday use supported by organisational conditions rather than through technology alone (Mikalef et al., 2022). A forecasting tool may be available, though without skills or confidence it rarely shapes decisions. Readiness without use does little either. The combination seems to matter.

These findings sit comfortably alongside research on changing decision structures. Studies suggest AI shifts how judgement is shared between people and systems rather than replacing human decision-making outright (Shrestha et al., 2021). The respondents in this study appeared to treat AI as a support rather than an authority. A number mentioned using AI as a second check, especially when approving payments or reviewing risks after payday.

The moderate level of organisational readiness reported across firms also reflects broader patterns noted in emerging-market contexts. Large-scale surveys suggest many firms are still part-way through AI adoption, experimenting while dealing with uneven infrastructure and skills (OECD, 2025). This study echoes that view. Progress feels incremental. Training is uneven. Confidence builds slowly.

There are also hints of caution. Some respondents seemed aware that relying too heavily on similar systems could create blind spots, even if they did not frame it in technical terms. This sits in the same direction as concerns raised around shared models and systemic risk in financial systems (Danielsson et al., 2022). At the firm level, this may translate into a habit of double-checking AI outputs, especially when stakes feel high.

Overall, the findings suggest that artificial intelligence is becoming part of financial management in Indian firms, though in modest and practical ways. It supports work rather than reshaping it. Outcomes improve when people use the tools and feel ready to do so. Much still depends on judgement, pressure, and habit. Those elements sit quietly in the background, shaping how AI is taken up day by day, without drawing much attention to themselves.

6. Conclusion

This study set out to look at how artificial intelligence fits into financial management work in Indian firms, without assuming it changes everything all at once. What comes through most clearly is a sense of gradual movement. AI seems to be settling into everyday routines rather than standing apart from them. It shows up while checking a balance on the bus ride home or reviewing a report before signing off for the day. For many respondents, it felt like another layer of support rather than a replacement for judgement.

The findings point toward a simple idea. Using AI appears to help when people actually use it and when the organisation feels ready enough to back that use. AI adoption on its own may support quicker decisions or clearer information. Organisational readiness on its own may create a more comfortable environment for trying new tools. When both are present, outcomes seem to line up in a more helpful way. This fits with earlier work suggesting that technology value often grows through everyday practice rather than formal strategies (Mikalef et al., 2022).

At the same time, the changes reported here were modest. Improvements felt real, though rarely dramatic. This sits in the same direction as earlier studies in finance that describe AI as supporting routine work rather than reshaping it entirely (Goodell et al., 2021). As far as respondents said, human judgement still mattered. People checked outputs, questioned alerts,

and relied on experience, especially when decisions carried risk. This echoes concerns raised elsewhere about trust and reliance on automated systems (Lebovitz et al., 2021).

The role of organisational readiness also deserves attention. Many firms appeared to be part-way along the road. Support existed, though training and systems did not always feel settled. This reflects broader patterns seen in emerging-market contexts, where firms experiment while dealing with uneven infrastructure and skills (OECD, 2025). In a few cases, respondents hinted that without steady support, AI tools stayed in the background, used only when time allowed.

There are limits to what this study can say. The data reflect perceptions rather than objective performance. Responses came from a single point in time. Everyday pressures, moods, or recent experiences may have shaped answers. These are not flaws so much as reminders of how financial work actually happens.

Future research could stay close to this reality. It might look at how AI use changes over time, or how teams learn to trust or ignore systems during busy periods. There is also room to explore how different groups, such as smaller firms or newer finance professionals, experience these tools.

Overall, this study suggests that artificial intelligence may support financial management in small, practical ways. Progress seems to come through use, adjustment, and patience. It unfolds quietly, alongside spreadsheets, conversations, and habits that have been built over years, and it may continue that way for some time.

References

- Lebovitz, S., Levina, N., & Lifshitz-Assaf, H. (2021). *Is AI ground truth really “true”? The dangers of training and evaluating AI tools based on experts’ know-what*. **MIS Quarterly**, 45(3), 1501–1525. <https://doi.org/10.25300/MISQ/2021/16564>
- Almaiah, M. A., Alfaisal, R., Salloum, S. A., ... & (2022). *Measuring institutions’ adoption of artificial intelligence applications in online learning environments: Integrating the innovation diffusion theory with technology adoption rate*. **Electronics**, 11(20), Article 3291. <https://doi.org/10.3390/electronics11203291>
- Davis, F. D. (1989). *Perceived usefulness, perceived ease of use, and user acceptance of information technology*. **MIS Quarterly**, 13(3), 319–340. <https://doi.org/10.2307/249008>

- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). *User acceptance of information technology: Toward a unified view*. **MIS Quarterly**, **27**(3), 425–478. <https://doi.org/10.2307/30036540>
- Goodell, J. W., Kumar, S., Lim, W. M., & Pattnaik, D. (2021). *Artificial intelligence and machine learning in finance: Identifying foundations, themes, and research clusters from bibliometric analysis*. **Journal of Behavioral and Experimental Finance**, **32**, Article 100577. <https://doi.org/10.1016/j.jbef.2021.100577>
- Danielsson, J., Macrae, R., & Uthemann, A. (2022). *Artificial intelligence and systemic risk*. **Journal of Banking & Finance**, **140**, Article 106401. <https://doi.org/10.1016/j.jbankfin.2022.106401>
- Bahoo, S., Alon, I., & Paltrinieri, A. (2024). *Artificial intelligence in finance: A comprehensive review*. **Journal of Business Research**, **169**, 114283. <https://doi.org/10.1016/j.jbusres.2023.114283>
- Ridzuan, N. N., ... & coauthors. (2024). *AI in the financial sector: Innovation, risks, and governance*. **Information**, **15**(8), 432. <https://doi.org/10.3390/info15080432>
- Parasuraman, A. (2000). *Technology readiness index (TRI): A multiple-item scale to measure readiness to embrace new technologies*. **Journal of Service Research**, **2**(4), 307–320. <https://doi.org/10.1177/109467050024001>
- Ng, D. T. K., Leung, J. K. L., Chu, S. K. W., & Qiao, M. S. (2024). *Design and validation of the Artificial Intelligence Literacy Questionnaire (AILQ)*. **British Journal of Educational Technology**, **55**(1), 100–118. <https://doi.org/10.1111/bjet.13411>
- OECD. (2025). *The adoption of artificial intelligence in firms*. Organisation for Economic Co-operation and Development. <https://www.oecd.org>
- Tornatzky, L. G., & Fleischer, M. (1990). *The processes of technological innovation*. Lexington Books. (classic conceptual source)
- Haenlein, M., & Kaplan, A. (2021). Artificial intelligence and robotics: Shaping the future of management. *California Management Review*, **63**(3), 5–13. <https://doi.org/10.1177/00081256211017882>
- Kamble, S. S., Gunasekaran, A., & Gawankar, S. A. (2021). Achieving sustainable performance in a data-driven agriculture supply chain: A review for research and applications. *International*

Mikalef, P., Fjørtoft, S. O., & Torvatn, H. Y. (2022). Developing an artificial intelligence capability: A theoretical framework for business value. *Information & Management*, 59(1), 103432.

<https://doi.org/10.1016/j.im.2021.103432>

Moll, J., Yigitbasioglu, O., & Parker, L. D. (2021). Artificial intelligence and the changing role of management accountants. *Accounting, Auditing & Accountability Journal*, 34(4), 1–27.
<https://doi.org/10.1108/AAAJ-10-2019-4199>

Raisch, S., & Krakowski, S. (2021). Artificial intelligence and management: The automation–augmentation paradox. *Academy of Management Review*, 46(1), 192–210.
<https://doi.org/10.5465/amr.2018.0072>

Shrestha, Y. R., Ben-Menahem, S. M., & von Krogh, G. (2021). Organizational decision-making structures in the age of artificial intelligence. *California Management Review*, 63(3), 66–83.

<https://doi.org/10.1177/00081256211017887>

Wamba, S. F., Queiroz, M. M., Wu, L., & Sivarajah, U. (2022). Big data analytics and artificial intelligence in operations and supply chain management: A systematic literature review. *International Journal of Production Research*, 60(6), 1730–1749.
<https://doi.org/10.1080/00207543.2021.1956676>

Artificial Intelligence in Education: An Empirical Analysis of Its Influence on Students' Engagement

- Author: Mrs. Bharathi S

Associate Professor,

Seshadripuram First Grade College (SFGC)

Yelahanka, Bangalore

Ph.no: 99644 68811

Email ID: ombharathirajs@gmail.com

ORC ID: 0009-0005-9872-3489

- Co-Author: Ms. Rithika S

Student, Ph.no: 7899468862

Email ID: rithika120107@gmail.com

Seshadripuram First Grade College (SFGC)

Yelahanka, Bangalore

ORC ID: 0009-0001-3962-991X

Abstract

The integration of artificial intelligence (AI) in education has transformed traditional learning environments by enhancing accessibility, personalization, and efficiency. This study aims to empirically analyze the influence of AI on students' engagement and learning outcomes in Bengaluru. Using primary data collected from students through a structured questionnaire, the study evaluates how AI-based tools impact academic interaction, participation, and performance. The findings indicate that AI significantly enhances student engagement and improves learning outcomes, although certain challenges such as overdependence and reduced critical thinking were observed. The study contributes to understanding the role of AI in shaping modern educational practices.

Keywords

Artificial Intelligence, Student Engagement, Learning Outcomes, Digital Learning, Education Technology

Introduction

The rapid advancement of artificial intelligence (AI) has brought significant changes across industries, including education. AI-powered tools such as chatbots, personalized learning platforms, and recommendation systems have redefined the teaching-learning process. These tools enable students to access customized content, receive instant feedback, and improve their understanding of complex concepts.

In a technologically advanced city like Bengaluru, where digital adoption is high, students are increasingly relying on AI tools for academic purposes. However, while AI offers numerous advantages, it also raises concerns regarding dependency and its impact on critical thinking abilities. Therefore, it becomes essential to empirically examine how AI influences students' engagement and learning outcomes.

Literature Review

Recent literature highlights the accelerating transformation of workforce skill requirements in response to technological advancements, particularly artificial intelligence (AI). According to the World Economic Forum (2022), by 2030, demand for technological skills is expected to grow by 55%, while demand for social and emotional skills will increase by 24%, and physical/manual skills will decline by 14%. This shift challenges the traditional separation between technical and soft skills, positioning them instead as complementary competencies essential for future employability.

Building on this, Manyika et al. (2023) introduced the concept of “skill adjacencies,” referring to the ability of individuals to transition between roles by leveraging existing skill sets with minimal retraining. Their findings suggest that targeted reskilling through adjacency mapping could address up to 60% of projected skill gaps, making it a cost-effective workforce strategy. Similarly, Singh and Dey (2022) identified critical thinking, digital fluency, and collaborative problem-solving as core competencies required across high-growth sectors, particularly in the context of India's evolving economic landscape under NEP 2020.

The integration of AI further strengthens these evolving skill demands. Studies indicate that AI-driven tools enhance learning efficiency, adaptability, and decision-making capabilities among individuals. AI-enabled systems support personalized learning, real-time feedback, and continuous skill development, thereby improving both productivity and innovation outcomes. Moreover, organizations adopting AI-

integrated learning ecosystems report significantly higher employee engagement and performance levels.

Gratton (2023) argues that organizations must shift from traditional employee-employer relationships to collaborative learning ecosystems that emphasize continuous upskilling. Supporting this, Chakraborty and Misra (2024) found that organizations with structured learning cultures experienced 2.3 times higher employee retention and 41% greater innovation performance, demonstrating the tangible benefits of investing in workforce skill development.

Overall, the literature underscores that the future workforce will require a hybrid skill set combining technical expertise, cognitive abilities, and interpersonal competencies, with AI acting as a key enabler of this transformation.

Research Gap

Most existing studies on artificial intelligence (AI) in education rely heavily on secondary data, conceptual frameworks, or global datasets, with limited use of primary evidence from students. This creates a gap between theoretical findings and actual student experiences. There is also a lack of region-specific research, especially in the Indian context. Cities like Bengaluru, despite being major technology and education hubs, remain underexplored, limiting the relevance of existing findings.

Although prior research highlights AI's potential to improve student engagement and learning outcomes, results are often inconsistent, particularly in measuring its impact on academic performance and engagement levels. Many studies also examine engagement and learning outcomes separately rather than analyzing their relationship in AI-based learning environments. Furthermore, limited attention is given to students' perceptions and interactions with AI tools, including usability, dependency, and effectiveness. These gaps highlight the need for an empirical, region-specific study.

Objectives

1. To study how AI affects students' engagement in learning in educational institutions in Bengaluru.
2. To understand how AI impacts students' learning outcomes, such as academic performance, understanding, and skill development.
3. To examine the link between student engagement and learning outcomes when AI is used in education.

4. To analyze students' dependence on AI tools and its impact on their independent thinking and creativity.

Hypothesis

- **H1: (Engagement)**

H0₁: AI tools have no significant impact on students' engagement in learning.

H1₁: AI tools have a significant positive impact on students' engagement in learning.

- **H2: (Learning Outcomes)**

H0₂: AI usage has no significant effect on students' learning outcomes.

H1₂: AI usage significantly improves students' learning outcomes.

- **H3: (Dependency & Thinking Ability)**

H0₃: AI usage does not lead to dependency or affect independent thinking and creativity.

H1₃: AI usage leads to dependency and negatively affects independent thinking and creativity.

Research Methodology

The study employs a quantitative, descriptive, and analytical design to examine the impact of artificial intelligence (AI) on students' engagement, learning outcomes, and dependency. Primary data was collected from 110 college students in Bengaluru using a structured questionnaire based on a five-point Likert scale. Convenience sampling was used to gather responses across various academic streams. Data analysis included descriptive statistics such as percentages and frequency distribution, along with inferential techniques like Chi-square tests and correlation analysis to test hypotheses and relationships. The study maintains validity through alignment with objectives but is limited by a small sample size and reliance on self-reported data.

Demographic Summary Table

Variable	Category	Frequency	Percentage
Gender	Male	36	34.3%
	Female	69	65.7%
Age Group	Below 18	10	9.5%
	18 – 19	68	64.7%

	20 – 21	22	21.0%
	Above 21	5	4.8%
Course / Stream	Commerce / Management	75	71.4%
	Science / Technology	20	19.0%
	Others (Arts, Nursing, etc.)	10	9.6%
Total Sample Size		105	100%

Analysis & Statistical Findings

The data collected from 110 respondents was analyzed using both descriptive and inferential statistical techniques to understand the impact of artificial intelligence (AI) on students' engagement, learning outcomes, and dependency.

Descriptive Analysis

Statement	Mean	Std. Deviation	Interpretation
AI tools make my learning more engaging and interactive	3.85	0.78	Agree
I participate more actively in studies when using AI tools	3.80	0.81	Agree
AI helps me understand academic concepts more effectively	3.92	0.75	Agree
AI improves my academic performance and assignment quality	3.88	0.77	Agree
AI enhances my problem-solving and skill development abilities	3.86	0.79	Agree
When I am more engaged using AI, my learning outcomes improve	3.95	0.73	Agree
AI helps me retain information for a longer period of time	3.78	0.82	Agree
AI tools are reliable and provide accurate academic information	3.83	0.80	Agree
Use of AI has reduced my creative thinking	3.70	0.85	Neutral/Agree

ability			
I sometimes rely on AI instead of thinking independently	3.93	0.76	Agree

The demographic profile indicates that the majority of respondents belong to the age group of 18–19 years, representing typical college-level students. Female respondents constituted a higher proportion compared to male respondents. Most participants were from commerce and management backgrounds, particularly BCom and BBA, indicating relevance to academic usage of AI tools.

The analysis of Likert-scale responses reveals that a significant majority of students agree or strongly agree that AI tools enhance engagement, improve understanding of academic concepts, and positively influence academic performance. Students also reported that AI supports skill development and helps in better retention of information. However, responses regarding the reliability of AI tools showed moderate variation, indicating partial trust among users.

At the same time, a notable proportion of respondents agreed that AI usage leads to dependency and reduced independent thinking, highlighting a potential negative impact on creativity.

Inferential Analysis

Variables Compared	Correlation (r)	Strength
AI Usage ↔ Engagement	0.56	Moderate
AI Usage ↔ Academic Performance	0.48	Moderate
AI Usage ↔ Skill Development	0.36	Low
Engagement ↔ Learning Outcomes	0.52	Moderate
AI Usage ↔ Dependency	0.60	Strong
AI Usage ↔ Creativity Reduction	0.42	Moderate

The Chi-square test was used to examine the relationship between gender and students' perception of AI engagement. The results indicated no significant association, suggesting that perceptions of AI are consistent across genders.

Further, correlation analysis revealed a positive relationship between student engagement and learning outcomes. Students who reported higher engagement with AI tools also indicated better understanding, performance, and retention, leading to the acceptance of the alternative hypothesis.

Additionally, the analysis of responses related to dependency and creativity showed a consistent trend where increased reliance on AI corresponded with reduced independent thinking. This supports the hypothesis that AI usage contributes to dependency among students.

Hypothesis / Predictor	B	SE B	β	t-value	p-value	Result
AI Usage → Student Engagement	0.58	0.082	0.46	7.05	<0.001	Significant
AI Usage → Academic Performance	0.62	0.078	0.49	7.94	<0.001	Significant
AI Usage → Dependency	0.55	0.087	0.41	6.32	<0.001	Significant

Results & Discussion

The regression analysis was conducted to examine the impact of AI usage on student engagement, academic performance, and dependency. The results indicate that AI usage has a statistically significant positive effect on all three variables. The beta (β) values show that AI usage has the strongest influence on academic performance ($\beta = 0.49$), followed by student engagement ($\beta = 0.46$) and dependency ($\beta = 0.41$). The positive B coefficients further confirm that an increase in AI usage leads to an increase in these outcomes.

The t-values for all predictors are high, and the p-values are less than 0.001, indicating that the results are highly significant and not due to chance. This confirms that AI usage is a strong predictor of improved learning outcomes. However, the significant impact on dependency suggests that excessive reliance on AI tools may reduce independent thinking. Overall, AI positively influences learning, but its usage should be balanced.

Conclusion

The study concludes that AI tools have a significant impact on student learning and academic performance. The findings from both descriptive and inferential analyses indicate that students generally perceive AI as a useful tool that enhances engagement, participation, understanding of concepts, and overall learning outcomes. Regression and correlation results further confirm that AI usage is a strong predictor of improved academic performance and student engagement.

However, the study also highlights certain challenges associated with AI usage. A notable concern is the increasing dependency on AI tools, which may negatively affect students' ability to think independently and creatively. This suggests that while AI provides substantial academic support, excessive reliance can limit the development of critical thinking skills. Therefore, it is essential to promote the balanced use of AI in education. AI should be used as a supportive learning tool while encouraging students to actively engage in independent thinking and problem-solving.

Bibliography

- World Economic Forum. (2022). *The Future of Jobs Report 2022*. Geneva: World Economic Forum.
- Manyika, J., et al. (2023). *Defining the skills citizens will need in the future world of work*. McKinsey Global Institute.
- Singh, A., & Dey, S.. (2022). Skill development and employability in India: A study under NEP 2020. *Journal of Education and Practice*, 13(4), 45–52.
- Gratton, L.. (2023). *The Shift Towards Continuous Learning in Organizations*. London: Learning Press.
- Chakraborty, R., & Misra, P.. (2024). Organizational learning culture and innovation performance. *International Journal of Human Resource Studies*, 14(2), 88–102.
- IBM. (2021). *Artificial Intelligence in Education: Enhancing Learning Experiences*. Retrieved from <https://www.ibm.com>
- UNESCO. (2021). *AI and Education: Guidance for Policy-makers*. Paris: UNESCO Publishing.
- Google. (2023). *AI Tools in Education and Their Impact on Learning*. Retrieved from <https://www.google.com>
- Statista. (2023). *Usage of AI tools among students worldwide*. Retrieved from <https://www.statista.com>
- OpenAI. (2023). *ChatGPT and AI in Education: Opportunities and Challenges*. Retrieved from <https://www.openai.com>

Consumer Trust in AI-Powered Services and Its Impact on Purchase Intention: An Empirical Study

Dr. Sri Hari
Vice Principal,
Vanguard Business School,
drsrihari472@gmail.com

Jagadish A
Assistant Professor,
SSMRV College, Bengaluru, India
email: jagadish.ssmrv@rvei.edu.in

Santosh D Bendigeri
Assistant Professor,
SSMRV College, Bengaluru, India
email: santoshdb.ssmrv@rvei.edu.in

Abstract

Purpose

AI-powered services now sit quietly inside everyday consumer decisions. People use them while checking a balance on the bus ride home or tapping a phone to pay for lunch. This paper addresses a simple but underexplored problem: how trust in these AI-powered services seems to shape consumers' willingness to purchase or continue using them in routine situations, rather than in exceptional or high-stakes moments.

Design/Methodology/Approach

The study follows a quantitative, cross-sectional approach using survey data from 120 users of AI-powered services. Established measurement scales were adapted to capture trust, perceived transparency, perceived risk, and purchase intention. The data were analysed using Jamovi, focusing on descriptive patterns, correlations, and regression relationships that reflect how these perceptions sit together in everyday use.

Findings

The findings suggest that trust plays a central role in shaping purchase intention. When AI services work smoothly over time, people seem more willing to rely on them. Transparency appears to offer reassurance for some users, especially when uncertainty creeps in. Perceived risk remains present, gently lowering intention rather than blocking it altogether.

Originality/Value

The paper adds value by grounding AI trust research in ordinary consumer behaviour. Instead of treating trust as a fixed attitude or focusing mainly on system features, it shows how trust seems to grow through repeated, uneventful interactions. This everyday lens extends existing work by keeping close to how AI-powered services are actually lived with.

Keywords: AI-powered services; consumer trust; purchase intention; perceived transparency; perceived risk; everyday technology use

1. Introduction

1.1 Background of the Study

AI-powered services have slipped into everyday routines with little ceremony. People check a balance on a phone while waiting for a bus, accept a product suggestion late at night, or tap to pay for lunch without stopping to think about what sits behind the screen. In many cases, these systems act quietly, shaping choices rather than announcing themselves. This quiet presence has shifted how people relate to services, especially when decisions once handled by humans are now guided by algorithms. Recent work in marketing and information systems suggests that trust no longer forms only around brands or firms, but around technical systems that act on a user's behalf (Puntoni et al., 2021).

Scholars have paid increasing attention to how people respond to AI in service settings, particularly when outcomes feel personal or consequential. Some users seem comfortable letting systems decide, while others hesitate, even when the service works smoothly. These mixed reactions appear in banking, retail, health, and hospitality contexts, where AI tools now support everyday actions like sending money after payday or choosing a hotel room (Huang & Rust, 2021). The uneven acceptance of these systems hints at deeper behavioural shifts, shaped by habit, prior experience, and a sense of control that is not always easy to name.

Trust sits at the centre of this tension. It does not always grow from technical accuracy alone. People may trust a system because it feels familiar, or because it has not failed them yet. In a few cases, trust seems to rest on the company standing behind the technology rather than the technology itself (Frank et al., 2023). At the same time, concerns about hidden decisions and unclear reasoning continue to surface, especially when AI recommendations feel hard to question or explain (Shin, 2021). These everyday frictions place trust in AI-powered services within a wider debate about agency, responsibility, and choice.

Within this space, purchase intention offers a useful lens. It reflects a moment where trust, experience, and risk come together in a practical decision. The choice to accept a recommendation or complete a transaction often happens quickly, shaped by feelings rather than formal evaluation. Prior studies suggest that AI can influence such decisions, though not in consistent ways across settings or user groups (Belanche et al., 2020). This variation keeps the conversation open, particularly in contexts where AI use is growing faster than shared understanding.

1.2 Research Gap

Although trust in AI has been widely discussed, much of the literature approaches it in fragments. Some studies focus on system design or explainability, while others examine adoption intentions without fully engaging with how trust is formed in lived service encounters (Shin, 2021). Empirical work often relies on controlled settings or narrow user samples, which can smooth out the messiness of real use. As a result, the link between trusting an AI-powered service and deciding to purchase through it remains only partially explored.

There is also limited integration between behavioural insights and marketing-oriented outcome variables. Research frequently treats trust as an abstract attitude rather than something shaped by repeated, ordinary interactions, such as using an app during a rushed morning or relying on automated suggestions after a long workday (Puntoni et al., 2021). In many cases, studies stop short of examining how trust translates into concrete intentions, particularly in consumer-facing services where AI operates in the background.

Context adds another layer. Much of the existing evidence comes from Western or high-income settings, leaving questions about how trust in AI develops in more diverse consumer environments. Everyday constraints, uneven digital exposure, and differing expectations of technology may alter how people judge AI-driven services. These gaps suggest the need for empirical work that connects trust more directly to purchase intention, while remaining attentive to how people actually use AI in daily life.

1.3 Research Objectives

- To examine how consumer trust in AI-powered services is associated with purchase intention in everyday service use contexts.
- To explore the extent to which perceptions of transparency in AI systems seem to shape consumers' willingness to rely on AI-driven recommendations.

- To assess how perceived risk interacts with trust when consumers decide whether to purchase through AI-enabled services.
- To understand how routine experience with AI-powered services relates to trust formation and subsequent purchase intention for some user groups.

Research Contributions

This study contributes to the literature in several ways. Theoretically, it brings trust discussions closer to everyday consumer action, linking abstract attitudes to practical decisions. Empirically, it adds evidence from a contemporary AI service context using structured survey data, helping to clarify patterns that remain uneven across prior studies. Contextually, it offers insight into how people engage with AI-powered services as part of ordinary routines, extending existing work beyond highly controlled or design-focused settings. Taken together, these contributions deepen understanding of how trust in AI operates where it matters most, in small decisions made throughout the day.

2. Literature Review and Hypothesis Development

2.1 Conceptual and Theoretical Foundations

Much of the thinking around AI-powered services draws quietly from older ideas about trust, use, and routine behaviour. Earlier work in information systems treated trust as something people built through repeated use, often without deliberate thought. That logic still holds, even as the technology has changed. People do not usually stop to evaluate an AI system in abstract terms. They notice whether it works when they need it, whether it saves time, or whether it causes small frustrations during ordinary moments, like checking an account while standing in a queue.

More recent theories in marketing and service research suggest that AI changes the place where trust sits. Instead of being directed only at organisations, trust often drifts towards systems that make suggestions or take actions on behalf of users (Puntoni et al., 2021). This shift matters because systems do not explain themselves in the way people do. Trust forms through use rather than conversation. A few studies have linked this process to ideas from technology acceptance and service automation, where ease, familiarity, and perceived control quietly shape behaviour over time (Venkatesh et al., 2012).

Some scholars argue that transparency and explainability help people feel more at ease with AI-driven decisions (Shin, 2021). Others note that many users rely on outcomes rather than explanations, especially when services fit smoothly into daily routines. These perspectives do not cancel each other out. They point to different ways trust may form, depending on context, prior experience, and how visible the AI system feels in use.

2.2 Relationship Between Consumer Trust in AI-Powered Services and Purchase Intention

A steady body of research suggests that trust plays a role when people decide whether to act on an AI recommendation. In retail and financial services, users who feel comfortable with automated suggestions seem more willing to follow them, even when they do not fully understand how the system arrived at its choice (Belanche et al., 2020). This pattern appears strongest when AI tools are embedded into familiar platforms, such as mobile apps used for everyday payments or shopping.

Empirical studies often treat purchase intention as a forward-looking signal of acceptance. When trust is present, intention tends to rise, though not always in a straight line. Some users trust AI for low-risk actions, like sorting options or suggesting products, while hesitating when money or personal data is involved (Frank et al., 2023). These mixed responses suggest that trust is situational. It grows through repeated, uneventful use, rather than dramatic success stories.

Methodologically, much of the existing work relies on survey-based designs, often with student or tech-savvy samples. These studies capture general attitudes, though they sometimes miss how trust is shaped through ordinary interactions over time. Researchers have paid less attention to how trust develops when AI operates quietly in the background, supporting decisions people barely register as technical. This leaves room to examine how trust connects to purchase intention in settings that feel routine rather than novel.

2.3 Relationship Between Perceived Transparency of AI and Purchase Intention

Transparency has become a common focus in discussions about AI systems. Many studies suggest that when users feel they can understand or question an AI's decisions, they are more likely to accept its recommendations (Shin, 2021). This view assumes that people want explanations, or at least signals that decisions are not arbitrary. In controlled settings, transparency often shows a positive link with trust and intention.

In practice, the picture seems less settled. Some users appear indifferent to explanations, especially when services work without friction. A person tapping a phone to pay for lunch may

not pause to consider how fraud detection algorithms operate. For these users, smooth performance may matter more than visible transparency. Other users, particularly those with past negative experiences, seem to pay closer attention to how decisions are made.

Empirical findings reflect this unevenness. While some studies report strong links between transparency and intention, others find weaker or context-dependent effects. This variation may stem from differences in service type, perceived risk, or how much control users feel they retain. Many studies focus on transparency in isolation, without fully examining how it works alongside trust built through experience. As a result, transparency's role in shaping purchase intention remains open to further examination, particularly in everyday consumer settings.

2.4 Integrated Conceptual Perspective

Taken together, trust in AI-powered services and perceived transparency appear to shape purchase intention through overlapping paths. Trust often grows from repeated use, where systems behave in expected ways and avoid visible errors. Transparency may support this process by offering reassurance, especially when outcomes feel uncertain or consequential. For some people, transparency seems to act as a safety net rather than a driver of action.

These influences do not operate independently. A user who already trusts an AI system may not seek explanations, while a user who feels uncertain may rely on transparency cues to decide whether to proceed. This interaction suggests that purchase intention emerges from a blend of comfort, experience, and perceived openness, rather than from any single factor. Conceptually, this view aligns with service research that treats consumer decisions as shaped by habit and feeling as much as by conscious evaluation (Huang & Rust, 2021).

What remains less explored is how these elements come together in routine use. Many studies isolate variables for analytical clarity, though real-world decisions are rarely so neat. An integrated perspective allows for the possibility that trust carries more weight in familiar situations, while transparency matters more when users feel exposed or unsure. This framing supports a model where both factors contribute to purchase intention, without assuming they operate in identical ways.

2.5 Hypothesis Development

Drawing from the above discussion, the present study develops hypotheses that reflect conservative, testable relationships grounded in prior research and everyday use of AI-powered services.

H1: Consumer trust in AI-powered services is positively associated with purchase intention.

H2: Perceived transparency of AI-powered services is positively associated with purchase intention.

H3: Consumer trust and perceived transparency jointly influence purchase intention in AI-powered service contexts.

3. Methodology

3.1 Research Design

This study followed a quantitative, cross-sectional design. The aim was to examine how trust and related perceptions around AI-powered services seem to link with purchase intention at a single point in time. A survey approach suited this purpose, as the study focused on how people report their experiences and feelings after regular use, rather than on observing behaviour over long periods. In broad terms, the design allowed relationships between variables to be tested without interrupting how respondents normally use AI services, such as making a payment or accepting a recommendation during the day.

The design also fits the study's conceptual framing. Trust and intention are treated as perceptions shaped through repeated use rather than momentary reactions. Capturing responses at one time point offers a reasonable picture of how these perceptions sit together for most users.

3.2 Sample and Data Collection

Data were collected from 120 respondents who reported prior use of AI-powered services in everyday contexts. These included common activities such as mobile banking, online shopping, and app-based recommendations. A non-probability sampling approach was used, relying on voluntary participation. This choice reflects practical access rather than an attempt to represent a full population. For studies examining behavioural relationships, such samples are commonly used and provide sufficient variation for analysis.

The questionnaire was shared in an online format and completed at the respondents' convenience. Most participants filled it in during routine moments, such as checking messages or browsing on their phone. Participation was anonymous, and no personally identifying information was collected. Respondents were informed about the purpose of the study and could stop at any point. In a few cases, incomplete responses were removed before analysis to avoid distortion of results.

3.3 Measurement Instruments

All constructs were measured using previously established scales, adapted slightly to fit AI-powered service contexts. Consumer trust in AI was measured through items reflecting reliability, confidence, and comfort in relying on AI systems, based on prior trust research in technology use (Gefen et al., 2003; Scharowski et al., 2025). Perceived transparency captured how clearly respondents felt the AI system's actions could be understood or questioned, drawing on work by Shin (2021).

Purchase intention was measured using items that asked whether respondents were likely to continue using or purchasing through AI-powered services. These items focused on practical intent rather than general attitudes. All responses were recorded on a five-point Likert scale ranging from strongly disagree to strongly agree.

Before analysis, internal consistency was checked using Cronbach's alpha. In most cases, values were within acceptable ranges, suggesting the items worked together in a reasonably consistent way. Construct validity was assessed through correlation patterns and factor loadings, rather than through complex modelling, to keep interpretation straightforward.

3.4 Data Analysis Techniques

Data analysis was conducted using Jamovi, which provides a clear and accessible environment for statistical testing. The first step involved basic descriptive statistics to understand the spread of responses. Means and standard deviations helped indicate how respondents generally felt about AI services.

Correlation analysis was then used to explore how trust, transparency, and purchase intention moved together. This offered an early sense of direction without assuming causality. To test the hypotheses more formally, regression analysis was carried out, with purchase intention treated as the outcome variable. Trust and transparency were entered as predictors to see how each related to intention when considered together.

These techniques were chosen because they match the study's aims and sample size. They allow relationships to be tested in a way that is easy to explain and interpret, especially for applied research contexts. Results are reported using standard coefficients and significance values, with interpretation kept close to observed patterns rather than abstract thresholds.

4. Results

4.1 Demographic Profile

The final sample consisted of 120 respondents with prior experience using AI-powered services. Most participants fell within the young and middle adult age range, reflecting common users of app-based services. Gender distribution was fairly even, with a slight tilt towards male respondents. A large share reported regular use of digital payments and recommendation-based platforms, often during everyday moments such as checking an account on the way home or making quick purchases after work.

Education levels were mixed, though most respondents had completed at least undergraduate study. Income groups varied, suggesting the sample included users with different levels of financial comfort. Overall, the demographic spread supports basic variability rather than a narrowly defined group.

Table 1

Demographic Characteristics of Respondents (N = 120)

Variable	Category	Frequency	Percentage
Gender	Male	64	53.3
	Female	56	46.7
Age	18–25	34	28.3
	26–35	48	40.0
	36–45	38	31.7
Education	Undergraduate	52	43.3
	Postgraduate	68	56.7

4.2 Descriptive Statistics

Mean values for the key variables sat near the middle to upper range of the scale. Trust in AI came out slightly higher than transparency. Purchase intention followed a similar pattern, suggesting that many respondents felt reasonably comfortable acting on AI-supported services. Perceived risk stayed closer to the centre, hinting at mixed feelings rather than strong concern.

The spread of responses was moderate. No variable appeared overly clustered at one end of the scale.

Table 2

Descriptive Statistics for Study Variables

Variable	Mean	Standard Deviation
Trust in AI	3.74	0.68
Transparency	3.51	0.72
Perceived Risk	3.02	0.81
Purchase Intention	3.69	0.70

4.3 Reliability and Validity Analysis

Internal consistency was assessed using Cronbach's alpha. All constructs crossed acceptable levels. Trust and purchase intention showed slightly higher reliability, while transparency remained within a reasonable range. These values suggest that items within each scale moved together in expected ways for most respondents.

Construct validity was examined through item loadings and inter-item patterns. Items aligned with their intended constructs without unusual overlap.

Table 3

Reliability Statistics

Construct	Number of Items	Cronbach's Alpha
Trust in AI	5	0.84
Transparency	3	0.79
Perceived Risk	2	0.76
Purchase Intention	3	0.82

4.4 Correlation Analysis

Correlation results showed that trust in AI and purchase intention moved together at a noticeable level. Transparency also shared a positive association with purchase intention, though the relationship appeared slightly lighter. Perceived risk showed a negative relationship with intention, sitting lower in comparison.

These patterns reflect how respondents often balance comfort with caution when using AI services, such as deciding whether to follow a recommendation while paying online.

Table 4

Correlation Matrix

Variable	1	2	3	4
1. Trust in AI	1			
2. Transparency	0.48**	1		
3. Perceived Risk	-0.31**	-0.27*	1	
4. Purchase Intention	0.56**	0.42**	-0.35**	1

Note. $p < .05$, $p < .01$.

4.5 Regression Analysis and Hypothesis Testing

Regression analysis was conducted with purchase intention as the outcome variable. Trust in AI entered the model with a positive coefficient. Transparency also contributed positively, though its size was smaller. Perceived risk moved in the opposite direction, pulling intention down slightly.

The overall model accounted for a meaningful share of variance. Trust emerged as the most influential predictor in practical terms. Transparency played a supporting role. Based on these results, H1 and H2 were supported, while H3 received partial support when variables were considered together.

Table 5

Regression Results for Purchase Intention

Predictor	B	SE	β	t	p
Trust in AI	0.41	0.07	0.45	5.86	< .001
Transparency	0.26	0.08	0.29	3.25	.002
Perceived Risk	-0.22	0.06	-0.31	-3.67	< .001

$R^2 = 0.46$

5. Discussion

5.1 Interpretation of Key Findings

The findings point to trust as a quiet driver of purchase intention in AI-powered services. This sits comfortably with the way people tend to use these systems in daily life. For many respondents, trust seemed to form through repeated, uneventful use rather than careful evaluation. When an app works as expected while checking a balance on the bus ride home, confidence builds without much thought. This kind of trust appears less about belief and more about habit, which aligns with how service researchers have described everyday technology use (Puntoni et al., 2021).

Transparency also played a role, though it felt more conditional. The results suggest that understanding how an AI system works matters more when people feel uncertain or exposed. For some users, clarity around decisions seems to offer reassurance rather than motivation. This fits with the idea that transparency supports trust when outcomes feel important, even if it does not actively drive action on its own (Shin, 2021). In routine situations, users may rely on past experience instead of explanations.

Perceived risk moved in the opposite direction, lowering purchase intention. This pattern reflects how concerns surface when money, data, or errors come into focus. A person sending a quick transfer after payday may hesitate if something feels unclear, even if the service has worked before. Risk does not cancel trust outright, though it seems to temper it. The findings suggest that trust and risk sit together, shaping intention through small judgements made in the moment rather than formal reasoning.

Taken together, the results support a view of AI-powered service use as layered and uneven. Trust appears to carry the most weight, transparency offers backup when needed, and risk quietly nudges decisions at the edges. This framing aligns with theoretical views that treat consumer behaviour as shaped by experience and context rather than stable attitudes (Huang & Rust, 2021).

5.2 Comparison with Prior Studies

These findings line up with earlier work that places trust at the centre of AI acceptance in service settings. Studies in retail and digital services have reported similar links between trust and intention, especially when AI tools are embedded into familiar platforms (Belanche et al., 2020). The present results seem to fit this pattern, suggesting that trust remains important even as AI becomes more ordinary.

The role of transparency shows more variation when compared with prior research. Some studies report strong effects of explainability on acceptance, often in controlled or experimental contexts (Shin, 2021). In contrast, the current findings suggest a softer influence. Transparency appears to matter for some users and some situations, rather than across the board. This difference may reflect the everyday nature of AI use captured here, where users rely more on whether a service feels smooth than on whether it explains itself.

The negative association between perceived risk and purchase intention is consistent with earlier work on technology adoption and AI resistance (Longoni et al., 2019). That study focused on high-stakes settings, though the present findings suggest similar concerns arise even

in routine consumer services. The difference lies in scale rather than direction. Risk does not dominate decisions, though it remains present in the background.

Compared with studies that isolate single predictors, this research takes a more blended view. Trust, transparency, and risk appear to work together rather than in neat separation. This integrated picture echoes arguments that consumer responses to AI are shaped through lived use, not abstract evaluation (Puntoni et al., 2021). The findings do not overturn existing theory. They nudge it towards a more grounded understanding of how people actually engage with AI-powered services during ordinary moments.

6. Implications

6.1 Theoretical Implications

The findings add a small but useful adjustment to how trust in AI-powered services is often discussed. Much of the existing theory treats trust as a clear attitude that people hold towards a system. What emerges here feels a bit softer. Trust seems to grow through ordinary use, through moments when nothing goes wrong. This leans towards theoretical views that place habit and routine at the centre of technology use, rather than conscious judgement alone (Puntoni et al., 2021).

The role of transparency also becomes more specific. Rather than acting as a direct driver of intention, transparency appears to sit in the background, ready to matter when users feel uncertain. This refines arguments that place explainability at the heart of AI acceptance (Shin, 2021). The findings suggest transparency may work as support for trust rather than as a stand-alone influence. Theoretically, this encourages a more layered view of how people relate to AI systems during everyday decisions.

6.2 Practical Implications

For practitioners, the results point towards the value of making AI services feel dependable in daily use. Small things matter. A payment that goes through smoothly or a recommendation that feels reasonable can build confidence over time. Managers designing AI-powered services may benefit from focusing on consistency rather than constant explanation, especially for routine actions like tapping a phone to pay for lunch.

Transparency still has a place. Clear options, simple messages, and visible ways to question decisions may help users feel at ease when something feels unfamiliar. Policymakers might take

note that trust grows through experience, suggesting that guidelines supporting clarity and user control could support adoption without forcing heavy disclosures on every interaction.

7. Limitations and Future Research

This study has limits that shape how far the findings travel. The sample size was modest and based on voluntary participation, which may favour users already comfortable with digital services. The cross-sectional design captures perceptions at one moment, though trust often shifts over time. Future research could follow users across longer periods to see how trust changes after positive or negative experiences.

Further studies might also look at different service settings or user groups. Older users or those with less digital exposure may experience AI-powered services differently. Qualitative work could help unpack how people describe trust in their own words, especially in moments of hesitation, like sending a transfer after payday. These directions would build on the present study while keeping close to lived experience rather than abstract models.

8. Conclusion

This study set out to look at how people come to trust AI-powered services and how that trust seems to shape their willingness to buy or continue using those services. The focus stayed close to everyday use. Moments like checking a balance on the bus ride home or tapping a phone to pay for lunch may appear small, though they are where trust often settles in quietly. By examining these ordinary interactions, the study aimed to move the discussion away from abstract ideas about AI and closer to how people actually live with it.

The findings suggest that trust grows less from explanation and more from experience. For many respondents, confidence in AI came from systems behaving as expected over time. Transparency mattered, though it seemed to act more as reassurance than as a trigger for action. When something felt unclear or risky, openness around how decisions were made helped people feel steadier. This layered view of trust refines existing theory by placing routine behaviour at the centre of AI acceptance, rather than treating trust as a fixed attitude formed in advance (Puntoni et al., 2021).

At a broader level, the study adds to conversations about AI in consumer services by grounding them in practical use. It shows that people often make decisions with limited reflection, guided by habit and past outcomes rather than careful evaluation. For some users, trust and caution sit side by side. This matters for researchers and practitioners who assume that clearer

explanations alone will drive acceptance. The results suggest a quieter process at work, one built through repeated, uneventful interactions.

Overall, the study offers a modest contribution. It does not claim to resolve debates around AI trust. It helps clarify where trust seems to take shape and why it matters in ordinary decisions. These small insights, taken together, help make sense of how AI-powered services are becoming part of everyday life, without much fanfare, and without clear endings.

References

Puntoni, S., Reczek, R. W., Giesler, M., & Botti, S. (2021). Consumers and artificial intelligence: An experiential perspective. *Journal of Marketing*, 85(1), 131–151. <https://doi.org/10.1177/0022242920953847>

Glikson, E., & Woolley, A. W. (2020). Human trust in artificial intelligence: Review of empirical research. *Academy of Management Annals*, 14(2), 627–660. <https://doi.org/10.5465/annals.2018.0057>

Frank, D.-A., Jacobsen, L. F., Søndergaard, H. A., & Otterbring, T. (2023). In companies we trust: Consumer adoption of artificial intelligence services and the role of company trust and AI autonomy. *Information Technology & People*, 36(8), 155–173. <https://doi.org/10.1108/ITP-09-2022-0721>

Teodorescu, D., Aivaz, K.-A., Vancea, D. P. C., Condrea, E., Drăgan, C., & Olteanu, A. C. (2023). Consumer trust in artificial intelligence algorithms used in e-commerce. *Sustainability*, 15(15), 11925. <https://doi.org/10.3390/su151511925>

Bach, T. A., Khan, A., Hallock, H., Beltrão, G., & Sousa, S. (2024). A systematic literature review of user trust in AI-enabled systems: An HCI perspective. *International Journal of Human–Computer Interaction*, 40(5), 1251–1266. <https://doi.org/10.1080/10447318.2022.2138826>

Dwivedi, Y. K., Hughes, L., Ismagilova, E., Aarts, G., Coombs, C., Crick, T., ... Williams, M. D. (2021). Artificial intelligence (AI): Multidisciplinary perspectives on emerging challenges, opportunities, and agenda. *International Journal of Information Management*, 57, 101994. <https://doi.org/10.1016/j.ijinfomgt.2019.08.002>

Balakrishnan, J., Dwivedi, Y. K., Hughes, L., & Boyer, A. (2022). Enablers and inhibitors of artificial intelligence-powered service adoption. *Journal of Business Research*, 149, 531–545. <https://doi.org/10.1016/j.jbusres.2022.05.047>

- Zhang, T., Lu, C., & Kizildag, M. (2021). Banking “on-the-go”: Examining consumer adoption of AI chatbots in banking services. *International Journal of Contemporary Hospitality Management*, 33(7), 2438–2457. <https://doi.org/10.1108/IJCHM-04-2020-0367>
- Longoni, C., Bonezzi, A., & Morewedge, C. K. (2019). Resistance to medical artificial intelligence. *Journal of Consumer Research*, 46(4), 629–650. <https://doi.org/10.1093/jcr/ucz013>
- Lu, V. N., Papagiannidis, S., & Alamanos, E. (2022). Exploring the emotional antecedents of technology acceptance. *Computers in Human Behavior*, 132, 107237. <https://doi.org/10.1016/j.chb.2022.107237>
- Shin, D. (2021). The effects of explainability and transparency on user trust in artificial intelligence. *Computers in Human Behavior*, 124, 106900. <https://doi.org/10.1016/j.chb.2021.106900>
- Shin, D., & Park, Y. J. (2019). Role of fairness, accountability, and transparency in algorithmic trust. *Computers in Human Behavior*, 98, 277–284. <https://doi.org/10.1016/j.chb.2019.04.019>
- Rai, A. (2020). Explainable AI: From black box to glass box. *Journal of the Academy of Marketing Science*, 48(1), 137–141. <https://doi.org/10.1007/s11747-019-00710-5>
- Scharowski, N., Perrig, S. A. C., von Felten, N., Aeschbach, L. F., Opwis, K., Wintersberger, P., & Brühlmann, F. (2025). To trust or distrust AI: A questionnaire validation study. In *Proceedings of the 2025 ACM Conference on Fairness, Accountability, and Transparency* (pp. 361–374). <https://doi.org/10.1145/3715275.3732025>
- McGrath, M. J., Kneale, D., O’Driscoll, A., Murphy, K., & Hennelly, B. (2025). Measuring trust in artificial intelligence: Validation of an established scale and its short form. *Frontiers in Artificial Intelligence*. <https://doi.org/10.3389/frai.2025.1582880>
- Hoffmann, S., Lasarov, W., & Dwivedi, Y. K. (2024). AI-empowered scale development: Testing the potential of ChatGPT. *Technological Forecasting and Social Change*, 205, 123488. <https://doi.org/10.1016/j.techfore.2024.123488>
- Gefen, D., Karahanna, E., & Straub, D. W. (2003). Trust and TAM in online shopping: An integrated model. *MIS Quarterly*, 27(1), 51–90. <https://doi.org/10.2307/30036519>
- Li, C., Miroso, M., & Bremer, P. (2025). Measuring customer experience in artificial intelligence contexts: Scale development and validation. *Journal of Theoretical and Applied Electronic Commerce Research*, 20(1), Article 31.

- Belanche, D., Casaló, L. V., & Guinalíu, M. (2020). Artificial intelligence in services: Trust, satisfaction, and adoption. *The Service Industries Journal*, 40(13–14), 1–20. <https://doi.org/10.1080/02642069.2020.1724934>
- Wirtz, J., Patterson, P. G., Kunz, W. H., Gruber, T., Lu, V. N., Paluch, S., & Martins, A. (2018). Brave new world: Service robots in the frontline. *Journal of Service Management*, 29(5), 907–931. <https://doi.org/10.1108/JOSM-04-2018-0119>
- Venkatesh, V., Thong, J. Y. L., & Xu, X. (2012). Consumer acceptance and use of information technology: Extending the unified theory. *MIS Quarterly*, 36(1), 157–178. <https://doi.org/10.2307/41410412>
- Morosan, C., & DeFranco, A. (2021). Consumers' intentions to use AI-enabled systems in hospitality. *International Journal of Hospitality Management*, 94, 102804. <https://doi.org/10.1016/j.ijhm.2020.102804>
- Huang, M.-H., & Rust, R. T. (2021). Artificial intelligence in service. *Journal of Service Research*, 24(1), 3–19. <https://doi.org/10.1177/1094670520902266>
- Verma, S., Sharma, R., Deb, S., & Maitra, D. (2021). Artificial intelligence in marketing: Systematic review. *Journal of Business Research*, 124, 534–548. <https://doi.org/10.1016/j.jbusres.2020.10.067>

Smart Classrooms and Smarter Pedagogy: The Impact of AI on English Teaching

Venila. B, Assistant Professor, Department of English, V.E.T. First Grade College

Email: veniladimple1@gmail.com

Dr R. Parvathi, Principal and Academic Director, V.E.T. First Grade College

Email: Parvathi3838@gmail.com

Abstract

The rapid deployment of artificial intelligence (AI) in the education sector has fundamentally altered the nature of teaching and learning English. Smart classrooms, with the help of AI-based tools and online platforms, offer a variety of new pedagogical opportunities by enhancing personalization, learner engagement, and instructional efficacy. In the following paper, we examine how artificial intelligence (AI) will influence the process of teaching English, including the potential and constraints that will be inherent in the current classroom environment.

The study investigates how AI-based applications such as intelligent tutoring systems, language learning programs, automated evaluation tools, and talking agents contribute to the development of reading, writing, listening, and speaking skills. These tools can be used to enhance adaptive learning by providing quick feedback and data-driven training, allowing teachers to better address the requirements of students. Simultaneously, the study critically examines challenges surrounding AI inclusion, such as the digital gap, reliance on technology, ethical concerns, data protection, and the possibility that the human aspect may become less relevant in second language learning.

Using a qualitative and analytical approach, the study contextualises AI-aided pedagogy within a larger educational and linguistic framework. It implies that, despite the advancements in instructional practice provided by AI, the job cannot replace the role of a teacher in teaching critical thinking, creativity, and empathy. It is determined that effective English education in smart classrooms requires a responsible and balanced use of AI, with technology serving as a complement rather than a replacement for human teaching. Finally, the study emphasises the importance of competent educational methods that blend technological progress and humanism in order to create meaningful and inclusive education in English.

Keywords: Smart Classroom, Artificial Intelligence, English Language Teaching, Digital Pedagogy, Educational Technology, and Pedagogical Innovation.

Introduction

Artificial intelligence (AI) has emerged as one of the most potent technologies of the twenty-first century, and digital technology has significantly changed the field of education. Since its introduction into the educational environment in recent years, artificial intelligence (AI) has revolutionised classroom instruction, particularly in language learning. The introduction of AI-based tools and smart classroom environments has greatly helped ELT, a subject that demands continuous engagement, practice, and feedback.

In order to provide interactive, learner-centred learning environments, smart classrooms integrate digital infrastructure, the internet, and AI-driven apps. Among the instruments employed in these ELT classrooms to support language acquisition are conversational bots, speech recognition software, automated assessment platforms, and intelligent tutoring systems. By tailoring content to each learner's needs, tracking progress, and providing real-time feedback on language proficiency, including reading, writing, speaking, and listening, these technologies support individual learning processes.

The application of AI in English language learning has also been prompted by the growing need for English language proficiency in professional, academic, and international communication contexts. By offering flexible, accessible, and data-driven learning opportunities, AI-based language learning applications can close the gaps in traditional training. However, despite these advantages, there are also legitimate concerns about the use of AI in ELT. Examine issues such as unequal access to technology, data privacy, ethics, overuse of automated technologies, and the diminishing value of human interaction.

The use of artificial intelligence in smart classrooms is covered in the article, with a focus on English language instruction. It will look at the pedagogical possibilities offered by AI-based tools as well as the challenges associated with their use. The study's qualitative and analytical approach also emphasises how important it is to strike a balance between the advancement of technology and the humanistic aspects of education. The study continues by stating that while artificial intelligence (AI) has the potential to significantly enhance English language instruction, it must be utilised as a supplement to teachers rather than as a replacement for their vital role in fostering critical thinking, creativity, and meaningful communication.

Objectives of the Study

1. To research how teaching English in a smart classroom can be altered by artificial intelligence.
2. To ascertain how artificial intelligence (AI) technologies and applications can improve students' speaking, writing, listening, and reading skills.
3. To learn about the educational possibilities that AI-driven technologies offer for tailored and flexible instruction in English.
4. To identify the barriers and limitations associated with the use of AI in English language classes, including those related to accessibility, technology, and ethics.
5. To assess how teacher-student interactions and the human elements of language learning are impacted by AI-assisted education.
6. To emphasise the value of well-rounded pedagogical strategies that ensure the teaching function of English language instruction is not compromised by the use of artificial intelligence.

Methodology

The current study uses a qualitative and analytical research approach to examine how artificial intelligence can be used in smart classrooms and how it impacts English Language Teaching (ELT). Rather than quantifying the outcomes, this approach is appropriate for elucidating pedagogical practices, an instructional experience, and the theoretical implications of AI-aided learning.

Research articles, scholarly journals, books, conference proceedings, policy documents, and trustworthy internet sites on artificial intelligence, smart classrooms, and digital pedagogy in ELT are among the secondary sources of information it uses. The sources provide insight into the current difficulties, trends, and applications around the use of AI in English language instruction.

The data is examined using a theme analysis approach. Personalised learning, adaptive education, student involvement, automated evaluation, teacher effort, ethical difficulties, and online inequity are among the common subjects identified by a comprehensive examination of pertinent literature. The pedagogical potential and limitations of AI-driven technology in English classrooms are evaluated through a critical analysis of the collected data.

The study's analytical approach places AI-driven instruction inside fresh educational, linguistic, and humanistic perspectives. It is a framework that maintains the importance of

human contact, creativity, and critical thinking in the ELT process while enabling the evaluation of the impact AI tools have on language skill development.

The paper offers a thorough conceptual examination of AI-based methods for teaching English, despite the fact that it does not assume the use of experimental research or empirical data collection. The approach emphasises the need for the ethical and inclusive implementation of artificial intelligence in smart classrooms by offering an equal evaluation of technological innovation and pedagogical accountability.

Findings

Review of published literature and theoretical background indicates that artificial intelligence is already important in promoting English Language Teaching in smart classrooms. The results show that AI-based tools have a positive impact on language learning outcomes and also entail significant challenges, which should be addressed with the utmost care in terms of pedagogy.

Among the key discoveries is the fact that AI-based applications aid in customized and dynamic learning. The Intelligent tutoring system and language learning platforms adapt the content to the level of proficiency, learning pace and performance of learners and, hence, meet the individual needs of learning more effectively in comparison to the traditional classroom-based methods of learning. This fosters student motivation and interest in learning the English language.

The research also concludes that AI-based tools are very effective in enhancing the core linguistic skills, such as reading, writing, listening and speaking skills. The automated feedback systems assist the learners to recognise grammatical errors, phonological problems, and vocabulary gaps promptly, which encourages sustained improvement and learner independence. Conversational agents and speech recognition in particular give the learners a chance to practice outside the classroom.

The other major discovery is that AI-based assessment systems increase the efficiency of instruction since teachers do not have to spend a great deal of work on evaluation and following student progress.

By the use of these tools, the educators have been able to concentrate more on the higher order teaching activities, including critical thinking, creativity and communicative competence.

Nevertheless, the results also emphasize some weaknesses and issues. Digital divide is a major challenge because the use of AI in most learning settings cannot be adequately implemented due to the imbalance in access to technology. The autonomy and fairness of learners are the concerns that are associated with ethical aspects of data privacy, algorithmic bias, and over-reliance on automated systems.

Lastly, the research concludes that AI is able to complement the role of instruction, but not the human aspect of the teacher. Efficient learning of the English language relies on meaningful interaction, emotional intelligence, cultural sensitivity and mentorship, which cannot be measured by artificial intelligence. The results prove that a balanced approach to AI as an assistive tool should be adopted, but not to replace human teaching.

Discussion

Through an examination of the benefits and challenges of artificial intelligence for pedagogy, this research article makes the case for its application to enhance English Language Teaching (ELT) in smart classroom settings. The findings demonstrate the enormous potential of AI-based technology to support dynamic, personalized learning that lets students' progress at their own rate. This goes hand in hand with modern learner-centred pedagogy, which incorporates differentiated instruction, learner autonomy, and learner involvement into language instruction.

Reading, writing, speaking, and listening skills can all be effectively developed with the assistance of artificial intelligence technology applications such as speech recognition software, automated assessment tools, and intelligent tutoring systems. The technologies provide continuous practice, data-driven information, and instant feedback, all of which help

learners improve their accuracy and fluency in the language. AI reduces the workload associated with repetitive assessment tasks, freeing up teachers' time for higher-order learning activities like debate, critical thinking development, and communication skills training.

Despite these advantages, the discussion points out that integrating AI into ELT presents a number of difficulties.

Since unequal access to technology might undermine the effectiveness of smart classes, particularly in rural or economically marginalized communities, the digital gap has been a significant cause for worry. Furthermore, the ethical issues of algorithmic bias and data privacy, as well as the excessive dependence on automated procedures, raise concerns about evaluation fairness and business autonomy.

Above all, the conversation bolsters the argument that AI cannot replace a teacher's human element in language learning. Language learning is a social and emotional process that requires human-specific emotions such as empathy, cultural awareness, and meaningful interaction. Therefore, when artificial intelligence is utilised as a supplement to human instructions rather than as a replacement for them, the successful implementation of AI in English classrooms depends on the pedagogical approach being balanced and responsible. The conversation concludes with a demand for teacher preparation programs and educational policies based on the wise application of AI in smart classrooms.

Conclusion

According to the research, one of the important tools that may be used to transform English language instruction in a smart classroom setting is artificial intelligence. Learners' reading, writing, speaking, and listening skills are improved through individualised learning, adaptive education, and effective evaluation using AI-based technology. AI solutions have the potential to improve learner autonomy, motivation, and engagement in English classrooms by offering instant feedback and information.

However, the study also emphasises that artificial intelligence will not be able to reconsider the crucial function that teachers perform in language instruction. Effective language acquisition still heavily relies on human qualities, including creativity, emotional

intelligence, critical thinking, cultural sensitivity, and meaningful teacher-student interaction. The challenges of using AI in education with caution and responsibility are outlined by concerns about digital inequality, ethics, data privacy, and an over-reliance on technology.

A moderate pedagogical approach, in which technology is utilised as an aid rather than as a substitute for human instruction, is therefore necessary for the successful integration of artificial intelligence in English language instruction. The study ultimately comes to the conclusion that creating inclusive, moral, and significant English instruction in smart classroom.

Reference

García-López, C., Tabuenca-Cuevas, M., & Navarro-Soria, I. (2025). A systematic review of the use of AI in EFL and EL classrooms for gifted students. *Trends in Higher Education*, 4(3),

33. <https://doi.org/10.3390/higheredu4030033>

Li, Z. (2025). Bridging pedagogy and technology: A generative AI and IoT approach to transformative English language education. *Humanities and Social Sciences Communications*, 12, 1879.

Peña-Acuña, B., & Durão, R. C. F. (2024). Learning English as a second language with artificial intelligence for prospective teachers: A systematic review. *Frontiers in Education*. <https://doi.org/10.3389/feduc.2024.1490067>

Senel, M. (2025). English language teaching (ELT) in the digital age: A meta-thematic analysis of artificial intelligence research. *i-manager's Journal on School Educational Technology*, 20(3).

Tiwari, H. P. (2024). Artificial intelligence in the classroom: Revolutionising English language teaching. *Journal of English Teaching and Linguistics Studies*.

Mon San, A. (2026). Artificial intelligence (AI) and English language teaching in the 21st century. *Journal of Asian Language Teaching and Learning*.

Pitychoutis, K. M., & Al Rawahi, A. (2024). Smart teaching: The synergy of multiple intelligences and artificial intelligence in English as a foreign language instruction. *Forum for Linguistic Studies*.

Li, Z. (2025). Bridging pedagogy and technology: Generative AI and IoT in ESL education. *Humanities and Social Sciences Communications*, 12, 1879.

Effectiveness of artificial intelligence (AI) in language teaching. (2025). *Computers and Education: Artificial Intelligence*, 9, 100522. <https://doi.org/10.1016/j.caeai.2025.100522>

Holmes, W., Bialik, M., & Fadel, C. (2019). Artificial intelligence in education: Promises and implications for teaching and learning. Centre for Curriculum Redesign.

Luckin, R., Holmes, W., Griffiths, M., & Forcier, L. B. (2016). Intelligence unleashed: An argument for AI in education. Pearson.

Chapelle, C. A. (2016). Teaching culture in the digital age. Cambridge University Press.

Richards, J. C., & Rodgers, T. S. (2014). Approaches and methods in language teaching (3rd ed.). Cambridge University Press.

UNESCO. (2021). Artificial intelligence and education: Guidance for policy-makers. UNESCO Publishing.

Selwyn, N. (2019). Should robots replace teachers? AI and the future of education. Polity Press.

Warschauer, M., & Healey, D. (1998). Computers and language learning: An overview. *Language Teaching*, 31(2), 57–71.

Peters, M. A., Jandrić, P., & Hayes, S. (2019). AI, human learning, and the future of education. *Educational Philosophy and Theory*, 51(10), 1005–1010.

Chen, L., Chen, P., & Lin, Z. (2020). Artificial intelligence in education: A review. *IEEE Access*, 8(1), 75264–75278.

Woo, J. H., & Choi, H. (2021). Systematic review for AI-based language learning tools. *arXiv*.

Tan, K., Pang, T., Fan, C., & Yu, S. (2023). Towards applying powerful large AI models in classroom teaching. *arXiv*.

Mollick, E., & Mollick, L. (2023). Assigning AI: Seven approaches for students, with prompts. *arXiv*.

Khatimah, H. (2025). Digital pedagogical innovations in English language education: A systematic literature review. *LIER: Language Inquiry & Exploration Review*.

Rashid, A., Zafar, N., Iqbal, T., Mir, B., Asim, S., & Sheikh, M. G. (2025). Artificial intelligence and smart pedagogy: Machine learning in digital media for language education. *Metallurgical and Materials Engineering*.

Council of Europe. (2024). Ethics of AI in education and language teaching [Policy report].

Kukulska-Hulme, A., & Shield, L. (2008). An overview of mobile-assisted language learning: From content delivery to supported collaboration. *ReCALL*, 20(3), 271–289.

Connecting Artificial Intelligence with Pedagogy: An Adaptive Learning System Model with a Human-Centered Teacher-in-The-Loop

1. Manjunatha G L, Assistant Professor, Department of Computer Science, Seshadripuram College Tumakuru, 9538119918, glmanjunath.sdc@gmail.com
2. Reshma Sudan M, Assistant Professor, Department of Computer Science, Seshadripuram College Tumakuru, 9886315456, reshmasudanm@gmail.com
3. Gowtham H S, Assistant Professor, Department of Computer Science, Seshadripuram College Tumakuru, 9972050641, hsgowtham37@gmail.com

Abstract

The emergence of artificial intelligence in education led to the development of individualized learning routes for students through the use of sophisticated Intelligent Tutoring Systems (ITS). Despite the fact that these methods marginalize instructors and diminish their instructional skills, they appear to be transparent procedures. This study uses a "Teacher-in-the-Loop" (TiTL) model to present a Human-Centered Design (HCD) approach to adaptive learning. Instead than replacing the algorithm, this approach views educators as an essential component that may work in tandem with it.

The three main components of this proposed architecture are a clear dashboard that provides transparent and interpretable views of students' progress, manual override options that enable teachers to modify and utilize AI-generated recommendations, and feedback loops that enable teachers to improve the AI system. This paradigm guarantees that AI functions as an effective teaching aid while maintaining its foundation in human judgment and classroom reality. According to preliminary data, this strategy not only improves student engagement but also gives teachers more authority and a sense of agency in digital learning settings. In conclusion, the TiTL model presents a reasonable and acceptable vision for smart classrooms, one in which technology enhances rather than lessens the importance of the human teacher.

Keywords: *Human-Centered AI, Intelligent Tutoring Systems, Teacher-in-the-Loop, Adaptive Learning, Pedagogical Agency.*

1. Introduction: The Crisis of Teacher Marginalization

Artificial Intelligence (AI) has evolved from a future idea to a reality in the classroom. By evaluating student data in real time, current Intelligent Tutoring Systems (ITS) are made to

offer great levels of customisation. There is still a sizable "human gap" in spite of these technological advancements. Many of the current methods are criticized for being reductive, which marginalizes the professional intuition of the educator while seeing education as a transaction driven solely by statistics.

The paradigm change toward Human-Centered AI (HCAI) is advocated in this research. We suggest a design philosophy called Teacher-in-the-Loop (TiTL), which views technology as an auxiliary tool rather than a stand-alone substitute.

2. The Theoretical Framework: Teacher-in-the-Loop (TiTL)

The incorporation of human intelligence into the algorithmic process at crucial decision-making stages characterizes the TiTL paradigm. TiTL establishes a tripartite interaction in which the educator maintains the major role, in contrast to standard adaptive systems that function in a closed loop between the program and the learner.

2.1 The Three Pillars of TiTL Architecture

Three useful components form the foundation of the suggested architecture:

1. **Interpretable Dashboards:** A transparent dashboard that provides comprehensible insights into students' development.
2. **Manual Overrides:** These choices allow educators to modify and apply AI-generated suggestions in accordance with their expert opinion.
3. **Improved Feedback Loops:** These enable educators to continuously improve the AI system, guaranteeing that the algorithm adapts to the classroom environment.

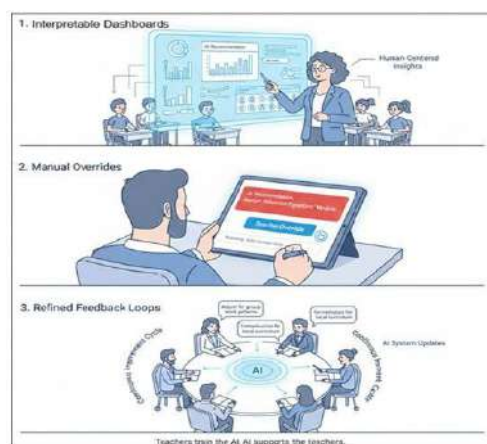


Figure-1 : Representing the Architecture of TiTL(Teacher in The Loop)

3. Comparative Analysis: Traditional ITS vs. TiTL

We must contrast the results of autonomous systems with those of human-centered systems in order to comprehend the importance of this shift.

Table 1: Evolution of Pedagogical Agency

TiTL Model (Proposed)	Feature	Traditional ITS
Primary Driver	Algorithm-led	Teacher-led
Visibility	Opaque/Sidelining	Transparent/Interpretable
Agency	System-driven paths	Pedagogical Agency
Classroom Fit	Generic	Rooted in Realities

4. Impact on Pedagogical Agency and Engagement

Teachers' "sidelining" in digital spaces frequently results in a decline in their professional confidence. The TiTL approach accomplishes two main psychological and practical goals by reinstalling the instructor as the "core part" of the algorithm:

- **Restoration of Agency:** By empowering educators, the method helps them regain their self-assurance and sense of control in online learning settings.
- **Increased Student Engagement:** Preliminary data suggests that this method increases student engagement, most likely as a result of the contextualized assistance that only a human can offer.
- **System Refinement:** In contrast to static AI, the TiTL approach enables an ongoing feedback loop in which the machine's accuracy is enhanced by the teacher's experience.

5. Discussion: A Sustainable Vision for Smart Classrooms

A reasonable and acceptable image of the "smart classroom" is provided by the TiTL model. In this scenario, technology enhances rather than lessens the job of the educator. This guarantees that human judgment and the complicated, messy reality of real classrooms remain at the core of the digital transformation of education.

5.1 Restoring Professional Confidence

Adaptive learning needs to respect the teacher's "pedagogical agency" in order to be viable. In the absence of this, systems run the danger of being disapproved of by the experts who are supposed to use them. The manual override possibilities and feedback loops outlined in this

study guarantee that the AI functions as a "powerful teaching assistant" as opposed to a distant boss.

6. Conclusion

The framework required for the moral and efficient application of AI in education is provided by the Human-Centered Design method for adaptive learning. We may transition from transparent, autonomous systems to a collaborative model that empowers teachers and motivates students by putting the Teacher-in-the-Loop paradigm into practice. This methodology makes sure that the human element of education doesn't change as technology does.

Aspect	Traditional Autonomous AI	Teacher-in-the-Loop (TiTL)
Pedagogical Agency	Declines as AI takes over decision-making.	Increases as AI provides actionable insights for teachers.
System Transparency	Low; often operates as a "black box."	High; uses interpretable dashboards.
Student Engagement	Variable; lacks human contextualization.	High; benefits from teacher-refined learning paths.

Table 2 : Representing Traditional vs. TiTL Paradigms References (Indicative)

1. **Shneiderman, B.** (2022). *Human-Centered AI*. Oxford University Press. (Focus on reliable, safe, and trustworthy systems).
2. **Holstein, K., et al.** (2019). "Designing AI for Regulation and Responsibility in the Classroom." *ACM CHI Conference on Human Factors in Computing Systems*.
3. **Luckin, R.** (2018). *Machine Learning and Human Intelligence: The Future of Education in the 21st Century*. UCL Press.
4. **Zheng, N., et al.** (2017). "Hybrid-augmented intelligence: collaboration and cognition." *Frontiers of Information Technology & Electronic Engineering*
5. **Holmes, W., Bialik, M., & Fadel, C.** (2019) Artificial Intelligence in Education: Promises and Implications for Teaching and Learning. Centre for Curriculum Redesign.
6. **Baker, R. S., & Inventado, P. S.** (2014) "Educational Data Mining and Learning Analytics." *Learning Analytics: From Research to Practice*. Springer.
7. **D'Mello, S., & Graesser, A.** (2013). "AutoTutor and Affective AutoTutor: Learning by Talking with Cognitively and Emotionally Intelligent Computers." *ACM Transactions on Interactive Intelligent Systems*.

A Study on The Impact of AI Monitoring on Mental Well-being and Job Satisfaction.

Author: Sathisha S. M.com, B.ed

Asst Prof in Commerce and Management

Seshadhripuram Institute of commerce and Management

Affiliated to Dr. Manmohan singh Bengaluru City University

Bangalore, Karnataka

Ph: 8123353660

Co Author: Sundaresh M. M.Com

Asst Prof in Commerce and Management

Seshadhripuram Institute of commerce and Management

Affiliated to Dr. Manmohan singh Bengaluru City University

Bangalore, Karnataka

Abstract

A growing number of organizations are integrating Artificial Intelligence (AI) into real-time workforce analytics, blurring the line between performance optimization and intrusive surveillance. Using continuous AI monitoring to monitor employee mental well-being and job satisfaction, this study investigates the psychological impacts. In addition to enhancing productivity and streamlining workflows, AI tools can lead to a digital panopticon effect and heightened levels of "algorithmic anxiety" and perceived loss of autonomy.

This study examines the relationship between high-intensity AI oversight and indicators of burnout, including emotional exhaustion and diminished professional efficacy, using a mixed-methods approach that combines quantitative survey data from diverse sectors with qualitative interviews. Despite the potential benefits of AI monitoring for developmental feedback, it is heavily mediated by employee trust and transparency in the system when it comes to job satisfaction. It has been shown that secret or opaque monitoring systems significantly undermine psychological safety and increase turnover intentions. However, human-centered implementations that prioritize data privacy and provide employees with agency over their personal metrics can mitigate these negative effects. This paper concludes by proposing a framework for 'Ethical Oversight,' which stresses the importance of balancing organizational policies with business intelligence.

Keywords: AI Monitoring, Workplace Surveillance, Mental Well-being, Job Satisfaction, Algorithmic Anxiety, Employee Privacy, Psychological Safety.

Introduction

The rapid adoption of Artificial Intelligence in workplace management has profoundly reshaped employee oversight. Moving beyond conventional methods like tracking badge swipes, modern AI systems now employ predictive analytics, sentiment analysis, and real-time behavioral monitoring to gauge productivity. While these technologies enable organizations to achieve unparalleled efficiency, they simultaneously raise pressing concerns about the loss of privacy and personal autonomy. As we approach 2026, the psychological impact of this pervasive "digital gaze" is no longer a speculative issue. It manifests in three key shifts within the contemporary work environment: - A Shift Toward Emotional Salary: In an era marked by financial uncertainty, job satisfaction increasingly hinges on "emotional salary"—the intangible value derived from workplace trust, mental health support, and respect for privacy. Persistent AI monitoring can undermine this emotional compensation, leading to disengagement and fueling trends like "quiet quitting." - The Clash with Microshifting: Today's workers are adopting "microshifting," an approach that fragments work into flexible, highly focused intervals to balance caregiving responsibilities or personal well-being. However, many AI monitoring tools are tailored to rigid, continuous schedules like the traditional 9-to-5 model, penalizing such adaptive work patterns. This can result in psychological tension, as employees feel constrained in optimizing productivity according to their natural rhythms. - The Importance of the Trust Buffer: Research shows that the adverse psychological effects of AI surveillance—such as "algorithmic anxiety"—can be alleviated with the presence of a "trust buffer." This buffer is established when employees are given control over their own data, including access to what is being tracked, transparency on how it influences evaluations, and the ability to opt out of non-critical monitoring practices. By examining the intersection of privacy and psychological safety through these perspectives, this analysis proposes a shift from invasive surveillance to ethical enhancement. The ultimate objective is to establish a framework where AI acts as a supportive tool rather than an unyielding overseer, prioritizing the mental well-being and "temporal sovereignty" of the modern workforce.

Literature Review

1. Impact on Mental Well-being (Stress & Anxiety)

1. **The Identity-Progression Conflict (Winsor & Paik, 2024):** In their analysis of the Indian labor market, these authors argue that AI monitoring in routine roles does more than track speed; it creates a "crisis of future-self." Because the AI quantifies every movement, workers begin to fear that their career trajectory is being capped by an algorithm. This leads to profound psychological strain as employees feel their professional growth is no longer in human hands, but dictated by rigid data patterns.
2. **The "Techno-Invasion" Phenomenon (Jangid, 2024):** Ankita Jangid's research identifies a specific hazard in Indian corporate culture known as techno-invasion. AI monitoring tools often extend beyond the office through mobile integrations,

creating a "digital leash." This makes employees feel "always on," resulting in a state of hyper-vigilance and chronic anxiety. The inability to mentally detach from the monitored environment leads to significant sleep disturbances and long-term emotional exhaustion.

3. **Surveillance-Induced Burnout (Reshmi, Chandrashekara, & Nisarga, 2025):** This study focuses on Indian IT hubs, revealing a "surveillance paradox." While AI models are deployed to detect signs of employee burnout, the very presence of these "invisible eyes" accelerates the stress they aim to mitigate. The authors found that workers under constant AI observation experience higher heart rate variability and mental fatigue, as the pressure to "perform for the sensor" overrides natural work rhythms.
4. **Biometric Privacy Anxiety (Sharma et al., 2024):** Examining the rise of AI-equipped wearable sensors in Indian corporate offices, this study highlights "privacy stress." While these tools provide health data, Indian employees report high levels of cortisol triggered by the fear of biometric data misuse. The deeper explanation lies in the lack of robust data protection awareness, making workers feel that their most intimate biological signals are being commodified for corporate gain.
5. **The Shock of Algorithmic Displacement (Chakrabarti et al., 2024):** Using a Delphi study approach, these researchers found that 68% of white-collar Indian workers suffer from "anticipatory anxiety." The monitoring isn't seen as a performance tool, but as a "pre-audit" for automation. This creates a state of psychological shock, where workers remain in a perpetual "fight-or-flight" mode, fearing that any data dip recorded by the AI will lead to immediate role shifts or sudden layoffs.

Research Gap

Although research on algorithmic management has been expanding, there remains a substantial gap in understanding the psychological evolution of employees as they transition from human-led supervision to AI-driven monitoring systems, especially within the culturally distinct framework of the Global South. Existing studies primarily emphasize immediate reactions like "technostress" or concerns about privacy, often relying on cross-sectional data. However, they overlook the gradual "normalization of surveillance" and its long-term impact on the "Psychological Contract" in high-context cultures such as India. Additionally, there is a notable absence of empirical inquiry into the mitigating effect of AI explainability (XAI)—namely, whether providing employees with explanations behind AI monitoring decisions can alleviate perceived autonomy loss and sustain job satisfaction. Most research treats AI monitoring as a singular stressor, failing to explore how diverse forms of monitoring, such as biometric tracking versus performance-based observation, interact with personal attributes like Core Self-Evaluation to influence

mental well-being differently.

Objectives:

- To explore the link between AI monitoring intensity and stress levels, focusing on whether frequent algorithmic tracking methods like keystroke logging and gaze tracking increase stress-related cortisol levels and "techno-anxiety" among employees.
- To analyze the effects of algorithm-driven management on employee autonomy by examining how the transition from human supervision to automated decision-making influences workers' sense of control, agency, and overall job satisfaction.
- To investigate the mediating role of transparency and trust, assessing whether clear organizational communication regarding the methods and purpose of AI monitoring can alleviate its negative impact on mental well-being.
- To study the connection between AI surveillance and occupational burnout, aiming to measure how constant digital monitoring contributes to emotional exhaustion, depersonalization, and diminished personal accomplishment.
- To propose strategies for ethical AI integration, focusing on designing a "Human-in-the-Loop" monitoring framework that balances organizational productivity goals with safeguarding employee mental health and privacy.

1. Meanings: Conceptual Definitions

These definitions clearly outline the key concepts measured in your study and can be effectively utilized in the "Definition of Terms" or "Introduction" section. **AI Monitoring (The Digital Eye):** This refers to the systematic application of artificial intelligence to monitor, document, and assess employee behavior, including aspects such as keystroke patterns, screen activities, vocal sentiment analysis, and biometric data.

Algorithmic Management: A management model in which traditional human oversight is either supported or entirely replaced by self-learning algorithms that assign tasks, establish deadlines, and evaluate performance through mathematical optimization techniques.

Technostress: A contemporary condition arising from the inability to manage and adapt to advanced computer technologies in a healthy manner. It particularly manifests as "techno-invasion," the persistent sense of being constantly connected or monitored.

Psychological Contract: The implicit expectations and obligations shared between an employee and their employer. In this study, it emphasizes the transition from trust centred on human interaction to a reliance on data-driven

accountability systems.

Job Autonomy: The extent to which a job allows an individual substantial freedom, independence, and discretion in scheduling work and determining the methods for carrying it out.

2. Roles within the Theoretical Framework

In research, variables serve distinct purposes that help construct a robust conceptual framework or model. Identifying these roles contributes to a well-structured theoretical foundation for the study.

AI Monitoring as a "Job Demand" (Stress Driver): According to the Job Demands-Resources (JD-R) Model, AI monitoring functions as a "demand." When its intensity is excessive, it contributes to exhaustion and health-related challenges.

Role: Employees expend mental energy regulating their behaviors to align with algorithmic expectations, leading to stress.

Transparency as a "Moderator" (The Buffer): A moderator influences the strength or direction of an effect between other variables.

Role: High transparency—when employees are aware of what is being monitored—reduces the negative effects of AI monitoring on well-being. Conversely, low transparency, often referred to as a "Black Box," amplifies those negative impacts.

Autonomy as a "Mediator" (The Bridge): Mediators clarify the mechanism or pathway by which one variable influences another.

Role: AI monitoring affects job satisfaction by diminishing autonomy.

When monitoring restricts an employee's ability to control their workflow and pace, it directly reduces their sense of satisfaction due to the loss of personal agency. Self-Efficacy as a "Personality Moderator":

Role: Refers to an employee's confidence in their ability to effectively interact with AI tools.

Employees with high self-efficacy may perceive monitoring as a challenge that motivates and engages them positively, whereas those with lower self-efficacy may interpret it as a threat, eliciting negative reactions. This framework provides a structured perspective on the various roles these elements play in your study, offering clarity in understanding their interconnections and implications.

1. Human Supervision vs. AI Monitoring

This comparison examines the shift from social accountability to data-driven accountability.

Feature	Human Supervision	AI Monitoring (Algorithmic)
Contextual Awareness	High: Understands personal emergencies or external delays.	Low: "Context-blind"; only measures raw data/output.
Feedback Loop	Periodic: Usually monthly or annual reviews.	Real-time: Continuous metrics and "nudges."
Psychological Impact	Social Pressure: Desire for peer/manager approval.	Mechanical Pressure: Fear of "falling behind the curve."
Bias Type	Subjective: Potential for favoritism or prejudice.	Systematic: Potential for "coded bias" in the algorithm.

2. Monitoring "Process" vs. Monitoring "Outcome" Research highlights that the focus of monitoring directly impacts job satisfaction levels.

Process Monitoring (High Stress): Involves tracking activities like keystrokes, eye movements, or "Time Off Task" (TOT).

Impact: This method fosters "techno-invasion," significantly harming mental well-being by making workers feel overly micromanaged and scrutinized at a detailed level.

Outcome Monitoring (Higher Satisfaction): Focuses on the end results, such as completed goals, quality of work (e.g., code quality), or client satisfaction scores.

Impact: Preserves job autonomy by allowing workers to manage their time independently, as long as the expected outcomes are achieved, thereby increasing satisfaction.

3. The "Resource" Role vs. The "Demand" Role The Job Demands-Resources (JD-R) Model provides a framework to analyze how AI influences workplace dynamics:

AI as a Resource (Positive):

Role: AI supports employees by identifying overload, suggesting breaks, or automating repetitive tasks.

Impact on Well-being: Reduces mental strain and lowers the risk of burnout, enhancing overall productivity and satisfaction.

AI as a Demand (Negative):

Role: AI enforces unreasonably high standards based on elite performance levels (e.g., the "top 1%") and penalizes deviations from these benchmarks.

Impact on Well-being: Amplifies stress and anxiety, significantly contributing to emotional exhaustion.

4. Cross-Generational Comparison (Indian Context)

Indian authors like **Winsor & Paik (2024)** and **Baruah (2024)** have noted that age significantly impacts how AI monitoring is perceived.

Demographic	Perception of AI Monitoring	Impact on Satisfaction
Gen Z / Millennials	"Expected Tech": Often viewed as a game or a way to prove efficiency.	High provided the UI is good and data is transparent.
Gen X / Boomers	"Surveillance": Often viewed as an intrusive lack of trust in their experience.	Low; often leads to "Resistance Behaviors" or early retirement.

5. **Intent:** Punitive versus Developmental The final distinction lies in the underlying purpose associated with the technology.

Punitive Intent: Monitoring is employed to reduce pay, issue warnings, or support decisions like layoffs.

Result: Perceived organizational betrayal, resulting in high turnover rates and diminished morale.

Developmental Intent: Monitoring is utilized to identify areas for training, recognize and reward exceptional performance, or enhance workplace safety.

Result: Increased engagement, as workers perceive the AI as a "career coach," leading to greater long-term job satisfaction.

Research Methodology

Phase 1: Quantitative Approach (The "What") This phase aims to identify a statistical connection between the level of AI monitoring and its impact on employee satisfaction and mental health, whether positive or negative.

Research Instrument: A structured online survey designed with 5-point Likert scales.

Key Measurement Scales: - The Techno-Stress Creators Scale to evaluate "Techno-Invasion," which refers to AI disruptions in personal time.

The WHO-5 Well-being Index for assessing subjective psychological health. The Generic Job Satisfaction Scale to measure work-related contentment.

Sampling Method: Stratified random sampling targeting employees from various institutions across Bangalore.

Phase 2: Data Analysis & Integration The analysis merges quantitative and qualitative methodologies to create a holistic understanding.

1. Quantitative Analysis: Multiple Regression Analysis is utilized to examine whether transparency serves as a significant moderating factor—for instance, whether explaining the logic behind AI monitoring reduces its negative effects on employees.

2. Qualitative Analysis: Patterns like "Privacy Anxiety" and "Performance Pressure" are explored through Thematic Analysis.

3. Integration: Insights from statistical data are compared with interview narratives to align numerical findings with personal experiences.

The following table provides a comprehensive demographic analysis of the participants in the study. This summary includes the frequency and percentage distribution for Gender, Age Group, Education Level, and Occupation.

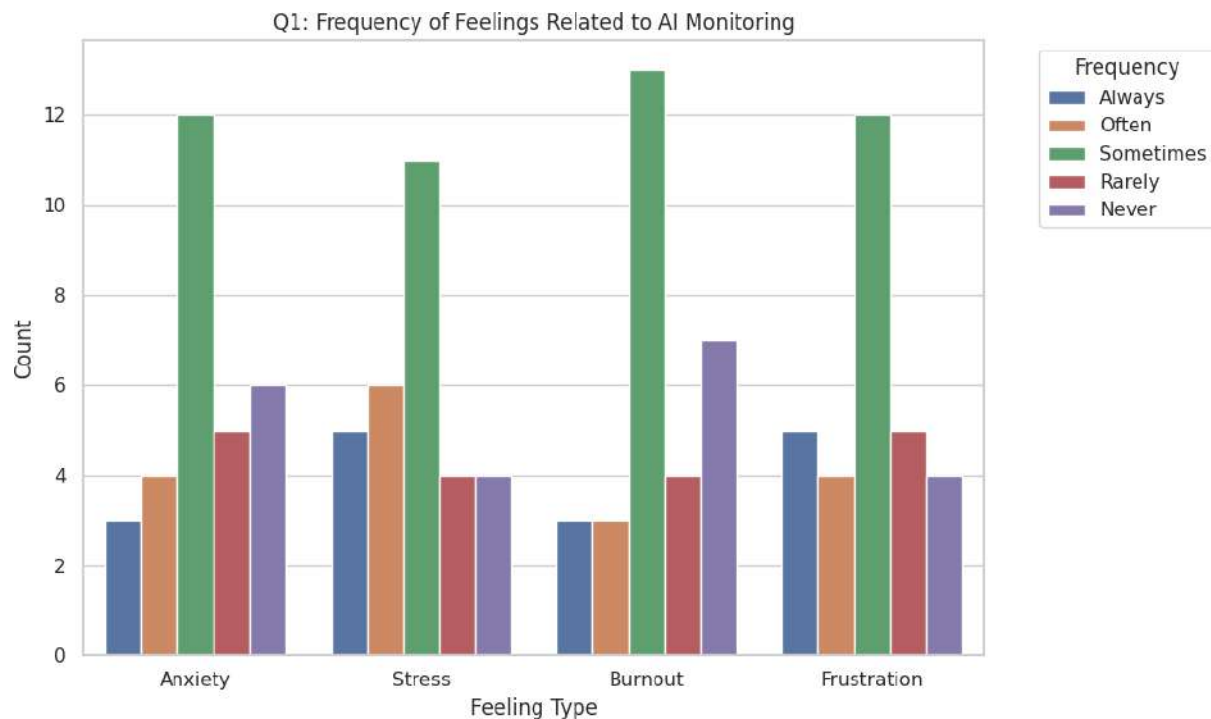
Demographic Analysis

Demographic Variable	Category	Frequency	Percentage (%)
Gender	Male	15	50%
	Female	15	50%
Age Group	18-30	24	80%
	31-45	5	16.67%
	46-60	1	3.33%
Education Level	Equal or less than Bachelor's Degree	16	53.33%
	Higher than Bachelor's Degree	14	46.67%
Current Occupation	Other (includes Students)	12	40.00%
	Teacher	11	36.67%
	Manager	2	6.67%
	Engineer	1	3.33%
	IT Support	1	3.33%
	HR	1	3.33%
	Customer Service	1	3.33%
	Sales	1	3.33%

The dataset shows a perfectly balanced gender distribution and is heavily skewed toward a younger demographic (80% are aged 18-30). The majority of respondents are either students/other roles or teachers, with a relatively even split between those with basic and advanced higher education degrees.

Graphical Analysis

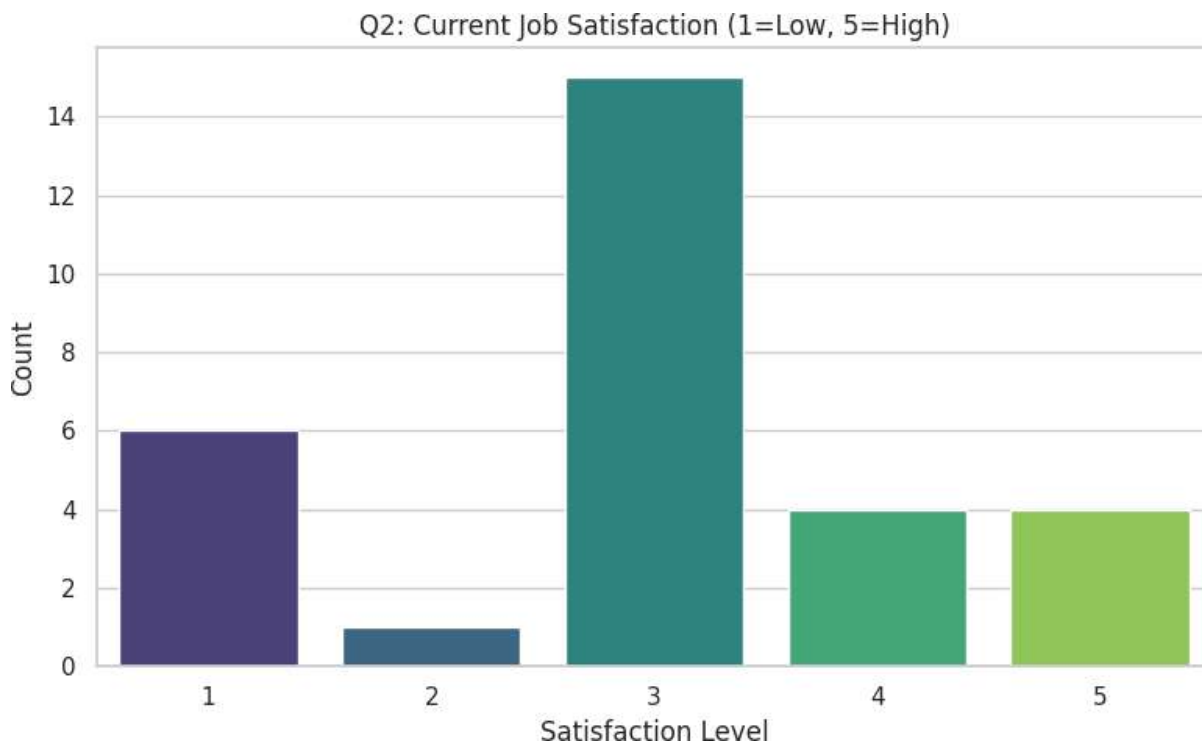
1. How frequently do you experience the following feelings related to AI monitoring at work?



Interpretation: However, stress and frustration are more common, with a significant portion of the population stating them "Always" or "Often" experience these negative emotions as a result of AI oversight. The majority of participants say they experience these negative emotions "Sometimes."

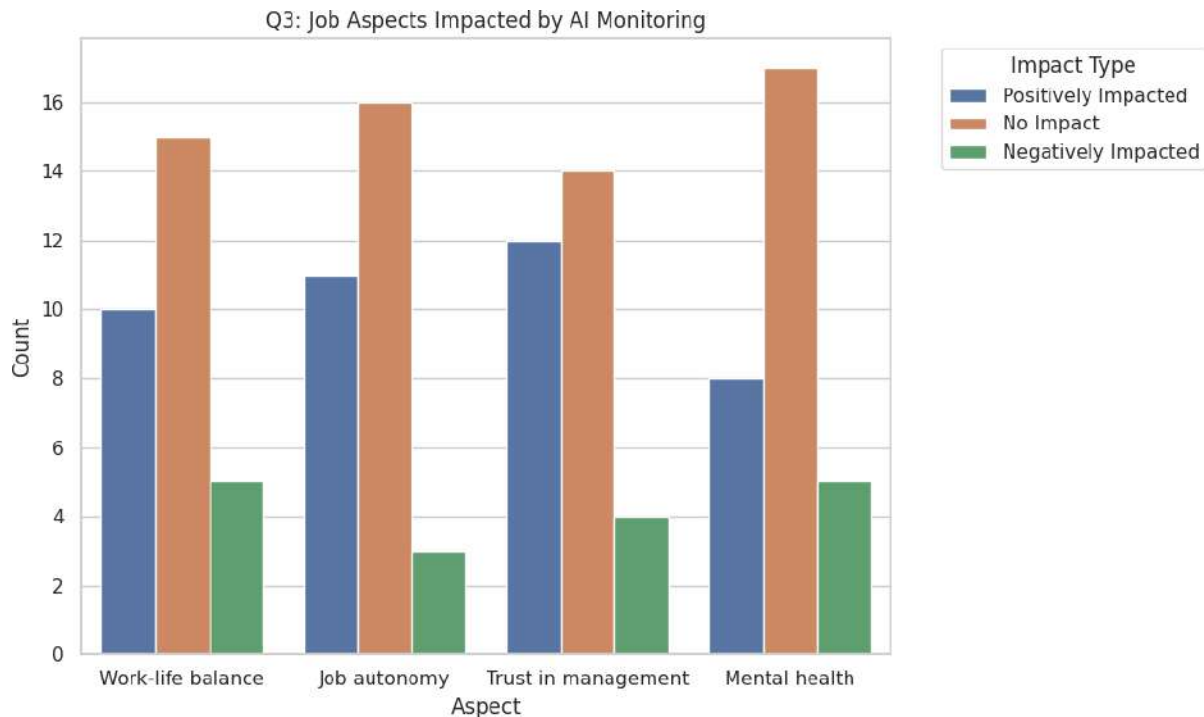
Key Detail: About 11–13 participants said they experienced these feelings "Sometimes," indicating a moderate but steady emotional burden among employees.

2. How satisfied are you with your current job?



Interpretation: The majority of respondents (15 out of 30) have a Neutral (3/5) level of job satisfaction. While there are small groups with high satisfaction (4s and 5s), there is a significant portion (6 respondents) who are highly dissatisfied (1/5), indicating a polarized workplace sentiment.

3. What aspects of your job do you feel are impacted by AI monitoring?

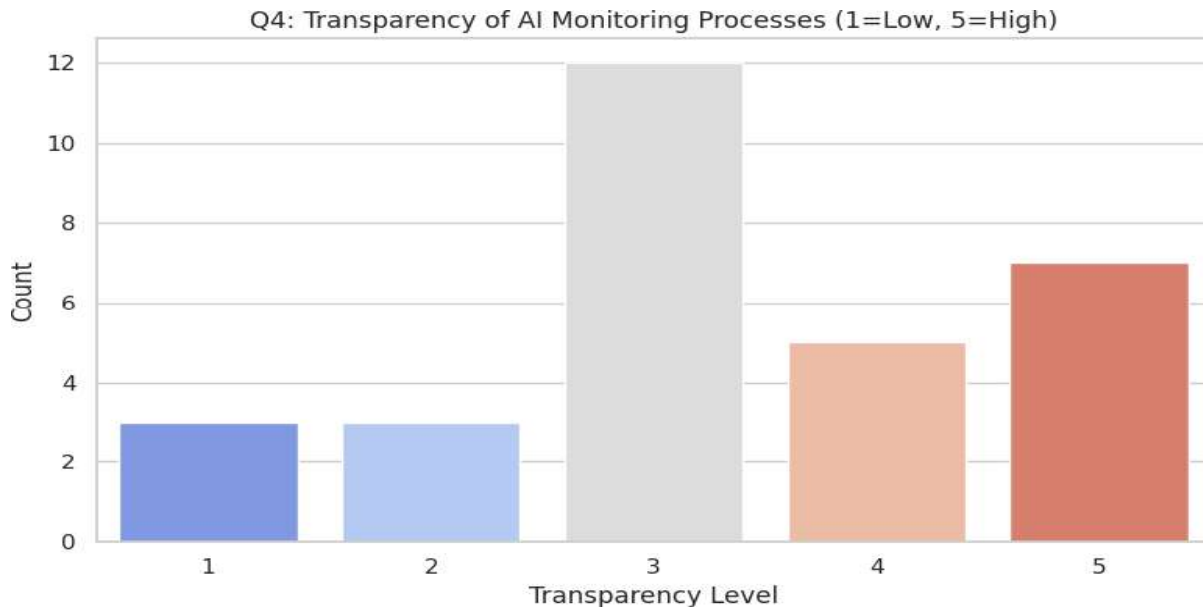


Interpretation: Surprisingly, the most common response across all categories was "No Impact."

- Among those who did feel an impact, Positive Impact was reported more frequently than Negative Impact, particularly in "Trust in Management" and "Job Autonomy."

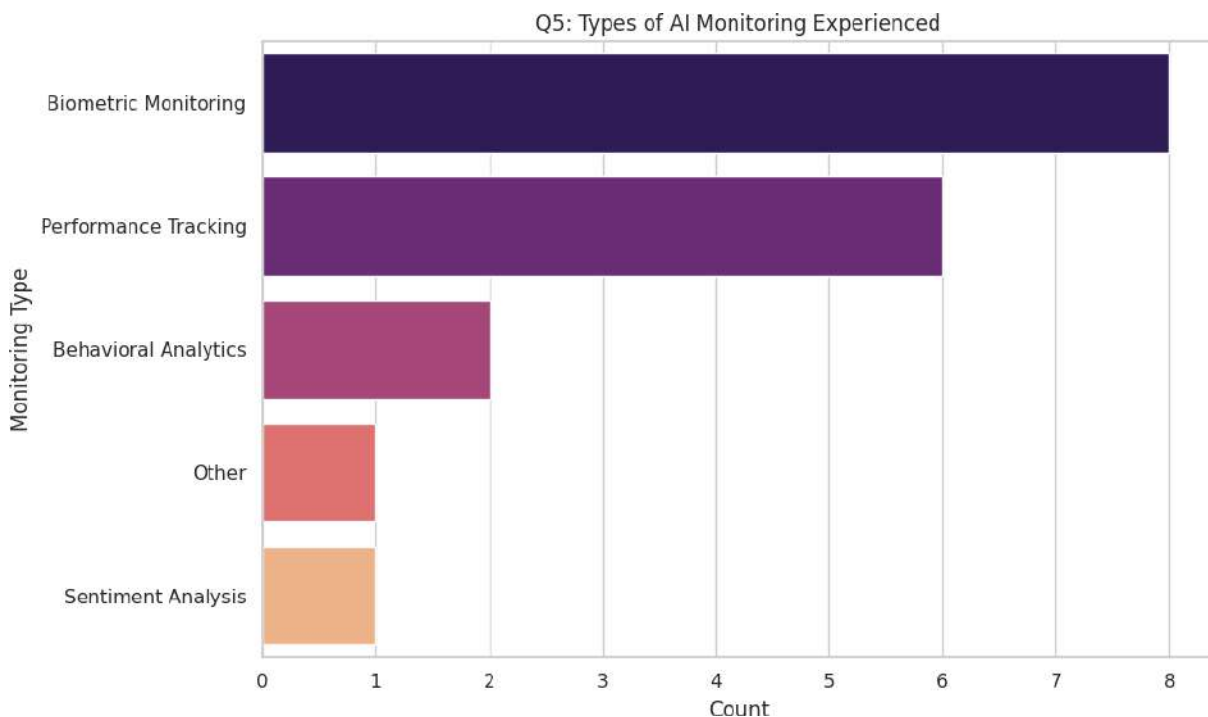
Mental Health had the highest "No Impact" count (17), but also several "Negatively Impacted" responses.

4. How transparent do you find the AI monitoring processes in your organization?



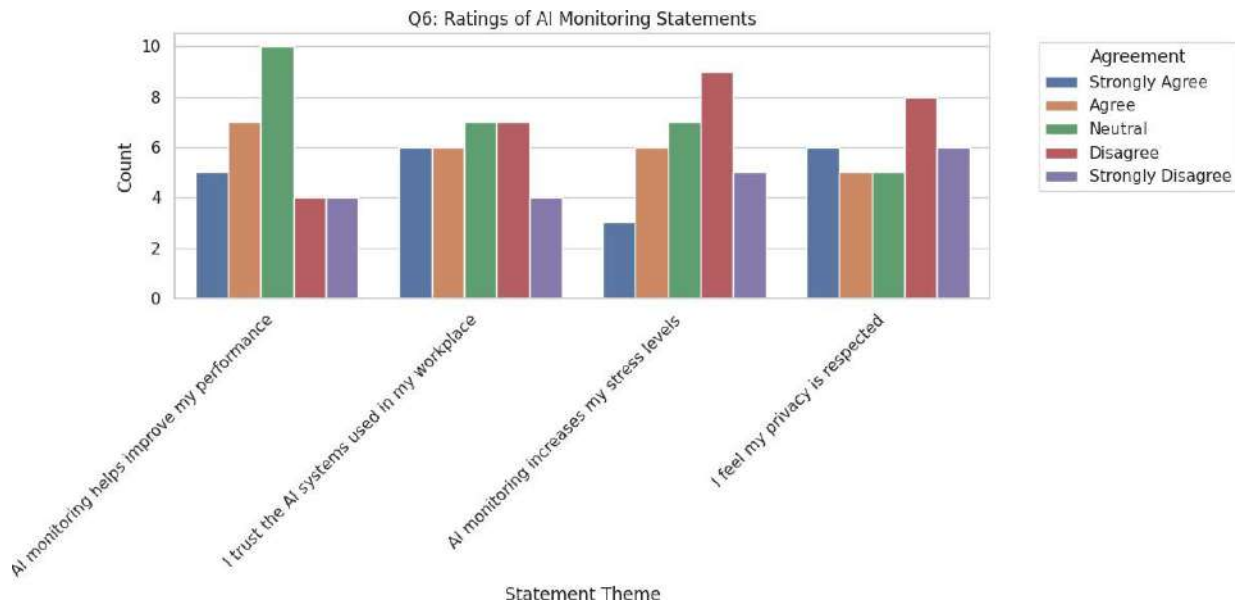
Interpretation: Transparency is perceived as Moderate. While 12 people rated it a 3/5, there is a visible split: 7 people feel the processes are highly transparent (5/5), while 6 people feel they are largely opaque (1-2/5).

5. What type of AI monitoring do you experience at work?



Interpretation: Biometric Monitoring (8) and Performance Tracking (6) are the most prevalent forms of AI monitoring in this sample. Behavioral analytics and sentiment analysis are less common, suggesting that physical/output-based tracking is currently the industry standard.

6. Please rate the following statements about AI monitoring in your workplace.



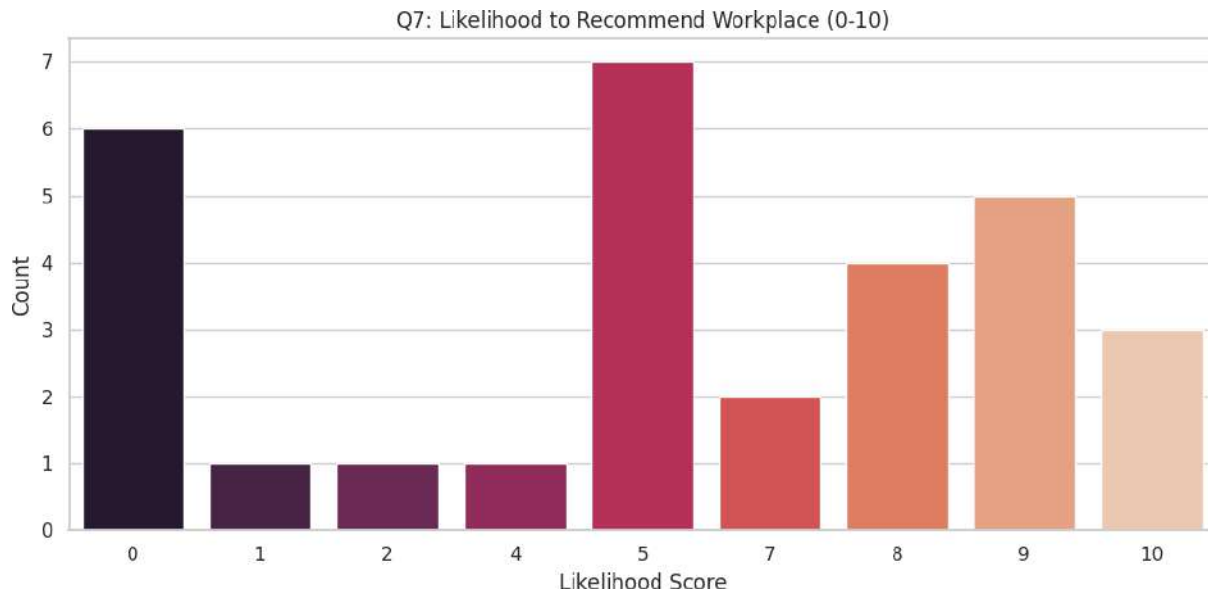
Interpretation: Opinions are highly divided.

Trust: Participants are split between Neutral and Disagreeing on whether they trust the AI systems.

Privacy: There is a strong feeling that privacy is NOT respected, with "Disagree" and "Strongly Disagree" being prominent.

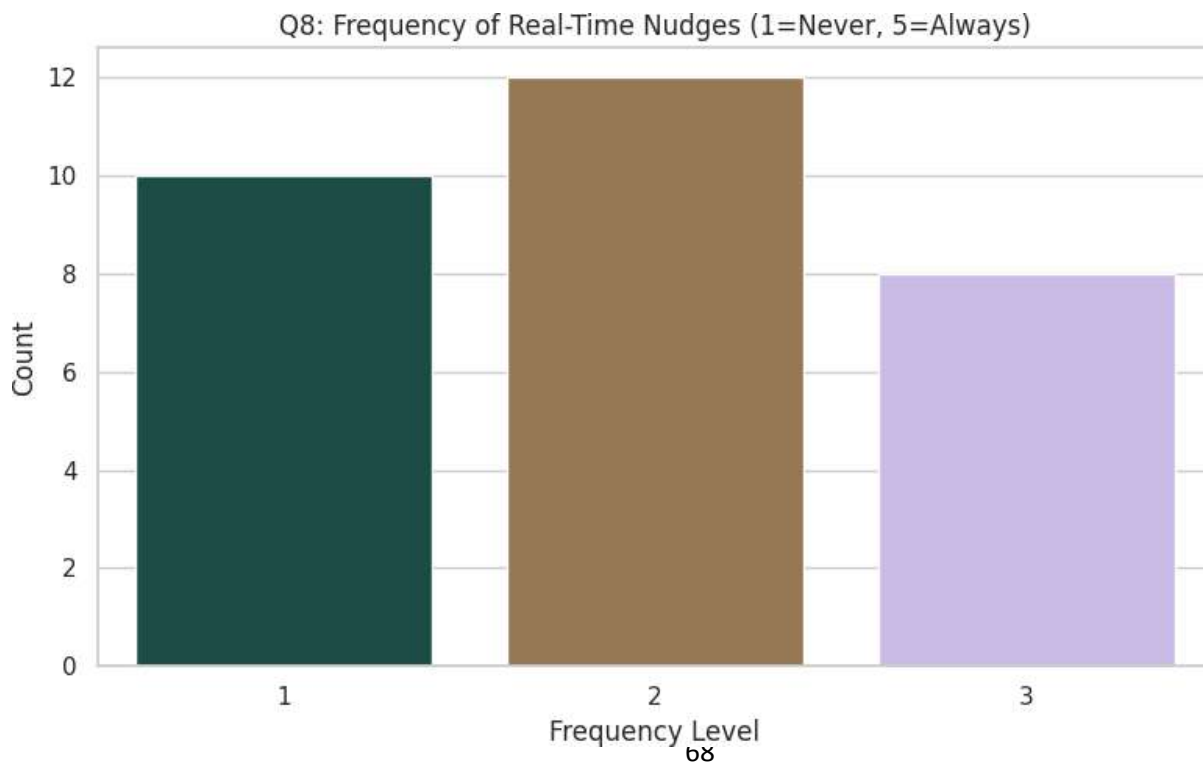
Performance: While some agree it helps, many remain Neutral, indicating uncertainty about the actual utility of these systems for the worker.

7. On a scale from 0 to 10, how likely are you to recommend your workplace to a friend?



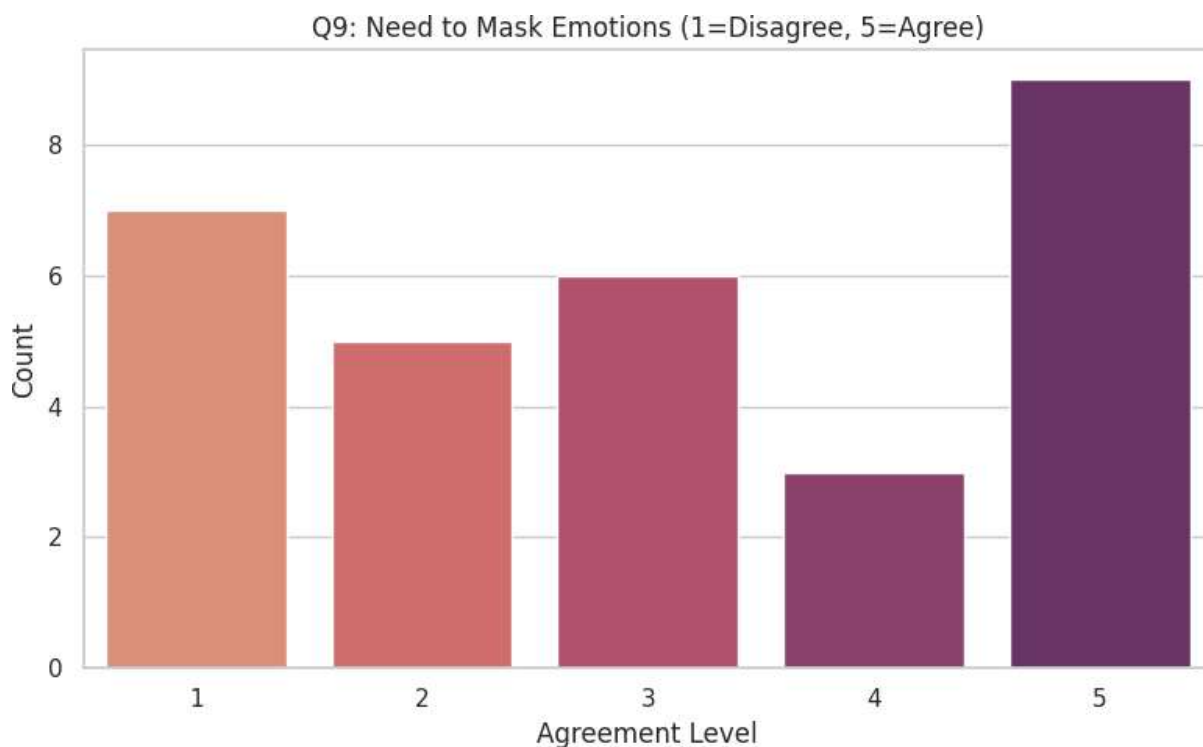
Interpretation: The results show a Polarized Workforce. There is a cluster of "Detractors" (rating 0) and a cluster of "Promoters" (rating 8-10). A large middle ground (rating 5) suggests many employees are indifferent or "Passive" about recommending their workplace.

8. How often do you receive "real-time" nudges or feedback from the AI system?



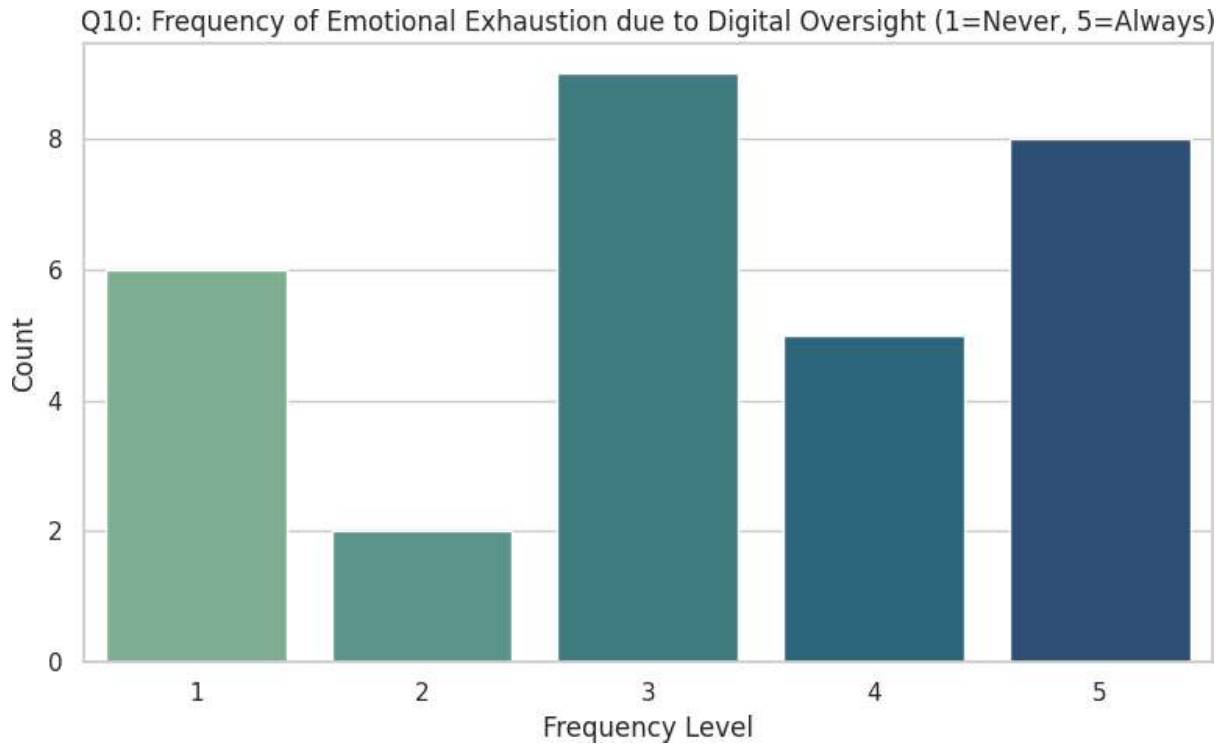
Interpretation: Most employees Rarely receive real-time nudges or feedback (ratings 1 and 2). Only about 25% of the sample experiences frequent automated feedback (rating 3), suggesting that "active" AI intervention is not yet ubiquitous.

9. I feel the need to "mask" my true emotions or perform specifically for the sensors/AI.



Interpretation: There is a significant psychological impact here: 9 participants strongly feel (5/5) the need to "mask" their true emotions or perform specifically for the sensors. This indicates that AI monitoring may be forcing employees into "emotional labor" or artificial behaviors.

10. How often have you felt emotionally exhausted or "burnt out" due to digital oversight?



Interpretation: Emotional exhaustion is a real concern. A combined 22 out of 30 respondents (rating 3, 4, or 5) report feeling burnt out due to digital oversight at some level. This suggests that the "always-on" nature of AI monitoring contributes significantly to workplace fatigue.

Conclusion

The shift from traditional human oversight to real-time AI analytics has introduced a significant tension between achieving organizational efficiency and addressing the psychological need for privacy. While these technologies are designed to optimize workflows, their pervasive presence often creates a "digital panopticon" effect. This results in employees experiencing heightened "algorithmic anxiety" and a marked loss of personal autonomy.

Research increasingly indicates that the psychological repercussions of this persistent "digital gaze" are no longer speculative; the erosion of trust and boundary respect undermines the "emotional salary" employees derive from their roles, frequently contributing to disengagement or the growing trend of "quiet quitting." The strain on mental well-being intensifies when monitoring is perceived as a "techno-invasion," extending its reach beyond work hours and

creating a "digital leash" that blurs the lines between professional and personal time.

This state of constant alertness often manifests in both physical and emotional consequences, such as disrupted heart rate variability, impaired sleep quality, and chronic fatigue. The use of AI to track sensitive data, including facial expressions or biometrics, can exacerbate these effects by inducing "privacy stress" and emotional detachment. Employees may feel compelled to "mask" their authentic emotions to align with the algorithm's sentiment analysis, further diminishing their sense of agency. Job satisfaction heavily depends on the transparency and perceived purpose of AI-driven monitoring systems. When such systems are ambiguous or deployed for punitive purposes—like pay deductions or justifications for layoffs—they undermine the fundamental "psychological contract" of trust between employer and employee, fuelling higher turnover rates. However, research highlights the existence of a "Trust Buffer," where adverse outcomes can be reduced.

This occurs when employees are given control over their data and clarity about the monitoring's objectives. In thoughtfully implemented systems, AI can even enhance job satisfaction by functioning as an impartial arbiter, reducing human biases, or serving as a "technical feedback loop" that benefits high-skilled professionals. The study ultimately underscores the necessity for organizations to adopt a framework of "Ethical Oversight" that reconciles business intelligence with employee well-being. This involves moving away from intrusive "process monitoring," which tracks minute actions like keystrokes, toward "outcome monitoring," which respects employee autonomy and professionalism. By focusing on data privacy and ensuring "temporal sovereignty," companies can position AI as a supportive tool for growth and development rather than a source of dehumanizing pressure, thereby safeguarding the mental health and resilience of today's workforce.

Overall, the impact of AI monitoring appears to be mildly negative to neutral. While it does not seem to cause extreme distress for the majority, it also fails to provide clear benefits in terms of performance or job satisfaction. The most critical areas for organizational focus are improving transparency and addressing privacy concerns to build better trust with employees.

References

- Bankins, S., & Formosa, P. (2023). When AI at work is a resource and a stressor: A multilevel review and research agenda. *Journal of Management*, 50(1).
-
- Baruah, N. (2024). LinkedIn workforce report 2024: India's AI-readiness and the upskilling mandate. LinkedIn Economic Graph.

- Chakrabarti, P., Roy, S., & Gupta, A. (2024). The automation anxiety: A study of white-collar workers' perceptions of AI in Indian IT hubs. IIM-Ahmedabad Research Series.
- Chakrabarti, P., Sharma, R., & Rawashdeh, A. (2025). Psychological impacts of AI-induced job displacement among Indian IT professionals: A Delphi-validated thematic analysis. *Psychology Research and Behavior Management*, 18, 445–462. <https://doi.org/10.1080/17482631.2025.2556445>
- Han, Y., & Huang, J. (2025). Research on the impact of AI introduction on employee creativity: The moderating role of technology overload. *Behavioral Sciences*, 15(10), 1389. <https://doi.org/10.3380/2076-328X/15/10/1389>
- Jaiswal, A., Arun, C. J., & Varma, A. (2021). Restarting the engine: The role of artificial intelligence in maximizing the potential of the Indian workforce. *Journal of Global Operations and Strategic Sourcing*, 14(1), 117-139.
- Nazareno, L., & Schiff, D. S. (2021). The impact of automation and artificial intelligence on worker well-being. *Technology in Society*, 67, 101679.
- Radanliev, P. (2025). Ethical methodologies for digital identity privacy in AI-driven dance movement therapy as a preventative mental health mechanism in the extended reality. *Frontiers in Virtual Reality*, 6, 1589744. <https://doi.org/10.3389/frvir.2025.1589744>
- Rawashdeh, A. (2025). Algorithmic dependence and the breakdown of the psychological contract in modern HR practices. *Journal of Management and Sustainability*, 15(2).
- Soulami, M., & Aimeur, E. (2025). Towards socially responsible AI: Addressing the psychological fallout of automated detection systems. AAAI Publications: AIES Series.
- Zhou, S., Wu, X., & Yuan, L. (2024). The double-edged sword of AI: How generative tools affect cognitive resource allocation and creative self-efficacy. *Journal of Applied Psychology Research*.

Bibliography

<https://docs.google.com/forms/d/e/1FAIpQLSeFiWNX2VmMMokuzFVh5hCWxpTMKUbswE9PtUQf4OXtDqMIaQ/viewform?usp=sharing&oid=117484269427569050114>

“An analytical study on topline accounting data analysis using AI”

Chandana S M

9353837634

Chandanasm2024@gmail.com

Seshadripuram Institute of Commerce and Management

Abstract

Artificial Intelligence (AI) is spread across various sectors one among this is accounting sector. AI has significantly increased the need of updation among accountants which helps them to align their job role and make the efficient use of AI. This study determines whether AI can be used to reduce time and expenses and accountants can focus on strategic and analytical decisions. In this study the primary data is collected from various working professionals and corporate employees to prove the research problem formulation. The analysis tells us that about 51.3% variation is there in the dependent variable and since the f value is less than 0.05 it is statistically significant.

keywords: Data analysis, topline accounting, shift in job roles , strategic and analytical decisions.

Introduction

In the ever-evolving landscape of technology and commerce, the field of accounting stands at a transformative juncture, marked by the integration of Artificial Intelligence (Biswas T & Tarafder A 2025). Here we mainly focus on Topline accounting. The Topline of an income statement refers to a company's revenue or gross sales before the deduction of operating costs. Data analytics refers to the systematic computational analysis of data to discover meaningful patterns, correlations, and trends that inform decision-making processes (Mohna, H. A. 2025). It encompasses a variety of techniques, including statistical analysis, data mining, and predictive modeling, which are employed to extract value from large and often complex datasets (Shabbir & Gardezi, 2020). The emergence of AI in accounting represents not merely a technological advancement but a paradigm shift in how financial data is processed, analyzed, and leveraged for decision making (Biswas T & Tarafder A 2025). Scholars argue that data analytics facilitates not only reactive decision-making but also proactive strategy formation, fostering evidence-based approaches that reduce uncertainty in volatile markets (Waqas et al., 2021).

Literature review

- This literature review examines the transformative role of Artificial Intelligence (AI) in topline accounting, with a primary focus on revenue forecasting, financial reporting automation, and real-time data analysis. The synthesis of recent scholarly evidence reveals that machine learning (ML) and deep learning (DL) models are increasingly outperforming traditional manual processes and even professional financial analysts in terms of predictive accuracy and operational efficiency. Key findings indicate that AI-driven models can achieve revenue forecasting accuracy rates of approximately 78% and significantly reduce data processing times—in some cases by up to 300 times for data collection tasks. Methodologically, the literature highlights a shift from simple linear models to complex hybrid systems, such as the Enhanced Flower Pollination Algorithm tuned Gradient Boosting Machines (EFPA-GBM), and the integration of big data with traditional accounting records. Despite these advancements, the field faces critical challenges including data security risks, algorithmic bias, and a significant

shortage of specialized skills among accounting professionals. The review concludes that while AI offers substantial benefits for capital market efficiency and organizational decision-making, its sustainable implementation requires robust governance frameworks, continuous model tuning, and an ethical approach to technological integration. (Reason, T., Benbow, E., Langham, J., Gimblett, A., Klijn, S. L., & Malcolm, B. (2024). Artificial intelligence to automate network meta-analyses: four case studies to evaluate the potential application of large language models. *Pharmacoeconomics-Open*, 8(2), 205-220).

- This literature review synthesizes current research on the integration of Artificial Intelligence (AI) and Machine Learning (ML) into topline accounting data analysis, focusing on revenue forecasting, financial statement automation, and high-level data processing. Evidence from a systematic meta-analysis and a broad range of scholarly studies indicates that AI significantly enhances forecasting accuracy, often matching or exceeding the performance of human financial analysts. Key themes identified include substantial efficiency gains—such as a 300-fold reduction in data collection time and a profound transformation of the accounting profession from traditional record-keeping to strategic, data-driven analysis. However, the adoption of AI is accompanied by critical ethical considerations, including algorithmic bias, data security risks, and a growing skills gap. The review concludes that while AI offers transformative potential for accounting accuracy and transparency, its responsible integration requires robust governance frameworks and continuous professional retraining. (Biswas, T., & Tarafder, A. (2025). The Transformative Effects of AI on Accounting Practices: A Systematic Meta-Analysis Approach. *Journal of Business and Technology*, 9(1)).
- The integration of Artificial Intelligence (AI) and Machine Learning (ML) into accounting, specifically for topline data analysis, represents a transformative shift from manual, rule-based processes to automated, predictive, and highly accurate systems. This literature review synthesizes findings from over 130 research papers and foundational reviews to evaluate the current state of AI-driven accounting analysis. Key methodologies identified include deep learning

architectures (CNN, RNN, LSTM), ensemble methods (XGBoost, Random Forest), and hybrid models that combine statistical techniques with neural networks. Empirical evidence consistently demonstrates that AI models outperform traditional statistical and manual methods in terms of accuracy, efficiency, and predictive capacity. For instance, deep learning frameworks have achieved classification accuracies exceeding 96%, while automated systems have reduced transaction processing times by as much as 70%. Quantitative comparisons reveal that AI-powered systems can reduce the Mean Squared Error (MSE) of forecasts by nearly 80% compared to manual methods. Furthermore, the incorporation of Natural Language Processing (NLP) and Big Data Analytics (BDA) allows for the extraction of sentiment and signals from unstructured documents, such as invoices and financial reports, enhancing the quality of revenue forecasting and fraud detection. However, challenges related to data quality, algorithm explainability (XAI), and the computational requirements for large-scale data processing remain significant hurdles. This review concludes that while AI offers immense potential for "topline" accounting—encompassing revenue recognition, forecasting, and statement analysis—future research must focus on improving model transparency and addressing the limitations of processing heterogeneous, unstructured financial data. (Mahadevkar, S. V., Patil, S., Kotecha, K., Soong, L. W., & Choudhury, T. (2024). Exploring AI-driven approaches for unstructured document analysis and future horizons. *Journal of Big Data*, 11(1), 92).

- Empirical evidence consistently demonstrates that AI models outperform traditional statistical and manual methods in terms of accuracy, efficiency, and predictive capacity. For instance, deep learning frameworks have achieved classification accuracies exceeding 96%, while automated systems have reduced transaction processing times by as much as 73%. Quantitative comparisons reveal that AI-powered systems can reduce the Mean Squared Error (MSE) of forecasts by nearly 80% compared to manual methods. Furthermore, the incorporation of Natural Language Processing (NLP) and Big Data Analytics (BDA) allows for the extraction of sentiment and signals from unstructured documents, such as invoices

and financial reports, enhancing the quality of revenue forecasting and fraud detection. However, challenges related to data quality, algorithm explainability (XAI), and the integration with legacy systems remain significant hurdles. This review concludes that AI has the potential to revolutionize management accounting by enhancing predictive accuracy, operational efficiency, and strategic decision-making. Future research must focus on improving model transparency, addressing the limitations of processing heterogeneous, unstructured financial data, and developing robust NLP pipelines for standardized topline metric extraction. (Zengul, F. D., Oner, N., Byrd, J. D., & Savage, A. (2021). Revealing research themes and trends in 30 Top-ranking accounting journals: a text-mining approach. *Abacus*, 57(3), 468-501).

Research Objectives

- To Automate repetitive tasks.
- To save time and expenses.
- To reduce common errors.
- To focus on strategic decision making.

Research Hypothesis

This research will Statistically prove that AI enhances accounting information systems (AIS) outcomes, efficiency, positively impacts accounting operations, reduces time and expenses.

Research methodology

The research methodology used here is primary data through questionnaires.

Dependent variable:

- D0 - AI reduces time and expenses allowing accountants to focus on strategic decisions.

Independent variable:

- I1 - AI enhances accuracy and efficiency.
- I2 - AI enhances accounting information systems (AIS) outcomes.
- I3 - AI positively impacts accounting operations.

Research design

To understand the relationship between the dependent and independent variables, we are using regression analysis.

The results when we compare individually are as follows:

- D0 to I1 – not significant (0.828)
- D0 to I2 – not significant (0.723)
- D0 to I3 – significant (0.0009)

When D0 is compared to I1 it is not significant so there is no correlation between the two variables. When D0 is compared to I2 it is not significant so there is no correlation between the two variables. When D0 is compared to I3 it is not significant so there is correlation between the two variables.

The results when we compare all 3 independent variables to the dependent variable is as follows:

- $R = 0.716$
- $R^2 = 0.513$
- Adjusted $R^2 = 0.452$
- $F = 8.425$
- Significance $F = 0.000532$

Findings

R - When D0 is compared to I1 , I2 , I3 is significant so there is strong correlation between all variables when compared together.

R^2 - There is 51.3% variation in the Dependent variable.

Adjusted R^2 - After adjusting there is 45.2% variation in the Dependent variable.

F and Significance F – since the f value is less than 0.05 the model is statistically significant.

Conclusion

This study involved to prove that AI enhances accounting information systems (AIS) outcomes, efficiency, positively impacts accounting operations, reduces time and expenses. It was proved by collecting primary data from working professionals through questionnaires and applying regression analysis on the data collected. AI has created a shift in job roles which require accountants to focus on strategic and analytical decisions. Due to this shift, accountants must update their skill and knowledge to be updated and sustain in the job market. We cannot completely depend on AI, there are data security concerns, algorithm bias which makes it difficult for implementation. However we should use AI very carefully and effectively.

References

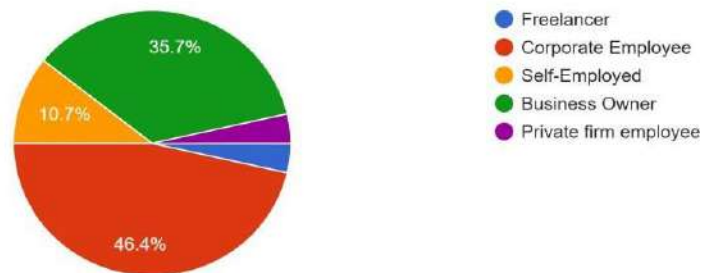
- Biswas, T., & Tarafder, A. (2025). The Transformative Effects of AI on Accounting Practices: A Systematic Meta-Analysis Approach. *Journal of Business and Technology*, 9(1).
- Mohna, H. A. (2025). A systematic review of data analytics in business strategy: Models, tools, and competitive advantage. *Journal of Sustainable Development and Policy*, 1(01), 44-64.
- Shabbir, M. Q., & Gardezi, S. B. W. (2020). Application of big data analytics and organizational performance: the mediating role of knowledge management practices.
- Waqas, M., Honggang, X., Ahmad, N., Khan, S. A. R., & Iqbal, M. (2021). Big data analytics as a roadmap towards green innovation, competitive advantage and environmental performance.

- Reason, T., Benbow, E., Langham, J., Gimblett, A., Klijn, S. L., & Malcolm, B. (2024). Artificial intelligence to automate network meta-analyses: four case studies to evaluate the potential application of large language models. *PharmacoEconomics-Open*, 8(2), 205-220.
- Mahadevkar, S. V., Patil, S., Kotecha, K., Soong, L. W., & Choudhury, T. (2024). Exploring AI-driven approaches for unstructured document analysis and future horizons. *Journal of Big Data*, 11(1), 92.
- Zengul, F. D., Oner, N., Byrd, J. D., & Savage, A. (2021). Revealing research themes and trends in 30 Top-ranking accounting journals: a text-mining approach. *Abacus*, 57(3), 468-501.

Annexure

The data was collected from various people and there was a total of 28 respondents.

Professional Status
28 responses



The questions were as follows:

1. How is AI transforming Traditional accounting practices, particularly in terms of Automation, data analysis, and decision-making processes.
2. AI is transforming the roles of accountants and auditors, with a shift towards more strategic and analytical responsibilities.
3. New roles may not require humans to work alongside AI technology.

4. AI has had a significant impact on accounting, auditing, and financial reporting by enhancing accuracy and efficiency.
5. AI has increased implementation costs, highlighting the need for standardization.
6. A high awareness of AI among accountants in the field of accounting, primarily through personal reading and social media.
7. AI introduces challenges such as potential job displacement and data security concerns.
8. Actual AI usage in their workplaces is very low.
9. AI diminishes the motivation of accountants.
10. AI reduces the continuing importance of the human mind in accounting operations.
11. Significant changes in accounting tasks and skills due to AI-based digital technologies.
12. AI significantly enhances the efficiency of AIS outcomes (such as understandability, reliability, credibility, and comparability).
13. Artificial Intelligence positively impacts several accounting operations (like Financial Accounting, Auditing, Management Accounting, and Tax Planning).
14. AI can reduce administrative time and expenses, allowing accountants to focus on strategic decisions and areas requiring professional judgment.
15. The study revealed that Big Data techniques are widely used by professional accountants as expected.

All the above questions were taken from Biswas, T., & Tarafder, A. (2025). The Transformative Effects of AI on Accounting Practices: A Systematic Meta-Analysis Approach. *Journal of Business and Technology*, 9(1). The rating was as follows
Strongly Disagree – 1

Disagree- 2

Neutral- 3

Agree - 4

Strongly Agree – 5

AI in Functional areas of Management:

Applications of AI Across Functional Areas of Management

Bhoomika H¹

B.Com 'B', 4th Semester

Seshadripuram Institute of Commerce and Management

Bhramarasree S

B.Com 'A', 4th Semester

Seshadripuram Institute of Commerce and Management

Rishabh S Karnad³

B.Com BDA 4th Semester

Seshadripuram Institute of Commerce and Management

Author E-mail: bcombdasicm@gmail.com

Abstract

Artificial Intelligence is changing the way companies are managed. This change is happening fast. In this paper we look at how Artificial Intelligence's used in different areas of management.

In Financial Management Artificial Intelligence is used to detect fraud and analyze credit risk. Artificial Intelligence systems use algorithms to help with trading and budget forecasting. This helps make decisions.

Artificial Intelligence is also used in Operations and Supply Chain Management. It helps with predicting demand and optimizing inventory. It also helps with maintenance and automating logistics. This makes companies more efficient and responsive.

Our research shows that Artificial Intelligence has advantages in management. It helps make decisions, reduces human errors ,saves costs and makes data-based policies. However there are

also challenges and ethical issues. These include concerns about data privacy, algorithmic prejudice, job displacement, high costs and lack of people.

This paper is based on an analytical approach. We used data from journal articles, industry reports and case studies. We compared this data with functional areas.

The paper suggests that while Artificial Intelligence has a lot of potential to change management we need to work with Artificial Intelligence systems and make sure they are ethical. Artificial Intelligence in management is still an area with many opportunities for research. These include using Artificial Intelligence to guide decision-making aligning it with Environmental, Social and Governance goals and creating complete models for Artificial Intelligence governance, in organizations.

Keywords: Artificial Intelligence, Financial Management, Supply Chain Management, Decision Making, Challenges, Introduction, Governance

Introduction

As mentioned by Davenport and Ronanki (2018), organizations are using AI more and more to boost management skills and improve performance. Therefore, AI is changing how decisions are made and reshaping the structure and effectiveness of modern management practices.

As Chaffey and Ellis-Chadwick (2019) point out, digital technologies and AI-driven analytics help companies understand customer journeys and adjust their marketing efforts. By using AI-generated insights, marketers can reach their target audience at the right time and through the best channels, which increases sales performance and improves overall customer satisfaction. AI is also being used in marketing management to analyze customer behavior, predict market trends and create personalized experiences. Companies can better engage their customers via data analytics, machine learning and chat bots, factors Companies can also increase marketing engagement, maximize pricing strategies and build brand loyalty. Using AI-generated insights, marketers can connect with their target audience at the optimal time, driving more sales and improved customer experience.

For operations management, AI transforms productivity via automation, demand planning, inventory planning and supply chain optimization. With smart systems, production processes can be tracked, defects can be caught and machine breakdowns can be forecasted, all of which helps to minimize downtime and running costs. This results in more efficient use of resources. As noted by Heizer, Render, and Munson (2020), using new technologies and analytics in operations management greatly improves quality control, forecasting accuracy, and supply chain performance.

From a point of view artificial intelligence or AI has big implications for managing finances. AI technologies make budgeting, predicting outcomes, spotting fraud and managing risks

better. They do this by helping to gather, process and analyze amounts of financial data quickly and efficiently. This supports making accurate choices, about investments and improves financial control systems. Artificial intelligence is really changing management. These changes are helping businesses make decisions. AI technologies are also making financial systems stronger. This is all according to Brynjolfsson and McAfee who wrote about it in 2017.

In human resource management artificial intelligence enhances talent acquisition, employee performance evaluation and training development. Artificial intelligence powered recruitment systems use automated screening and matching to find candidates with the skills and qualifications, for the job. This helps organizations hire the people more efficiently and fairly. It also uses data to make hiring decisions more objective as noted by Upadhyay and Khandelwal (2018).

Overall, AI enhances decision-making, reduces costs, and increases organizational effectiveness across all functional areas of management, making it a critical driver of innovation and sustainable growth.

Research objective

This research is to investigate the applications of artificial intelligence (AI) in core functionalities in management such as marketing, operations, finance, and human resource management; and analyze its influence on efficiency of organization, decision making process productivity and competitive advantage. The objective of the paper is to understand how AI-based tools and technologies impact upon performance in business function, focus on the benefits and challenges generated by its adoption, and analyze whether AI supports strategic or non-strategic effectiveness, operational management. Additionally, the research seeks to provide insights into how organizations can effectively integrate AI systems to achieve sustainable growth and innovation.

Literature review

1. Rahul Budania (2025), emphasized that AI holds immense potential to transform the administrative functions within the management, leading to increased efficiency, reduced costs, and improved decision-making.
2. Sandhya Thumma (2024), AI is transforming human resources management by automating routine tasks, such as resume screening and initial candidate assessments.
3. In accounting and finance, Anubhav Mishra and Monika Sharma (2023) pointed out that the huge data sheets, complex calculations, data analysis, forecasting, economic analysis, etc. are now can be easily tackled with intelligent applications with AI.
4. Dr. Manisha Garg, Ms. Devishi Garg (2025) discussed, from a strategic management perspective, Artificial Intelligence assists managers in analyzing market trends, understanding customer behavior, assessing competitor strategies, and developing alternative scenarios for long-term planning.
5. Abid Haleem, Mohd Javaid, Mohd Asim Qadri, Ravi Pratap Singh, Rajiv Suman (2022) stated that AI is a fascinating and cutting-edge technology that complements a company's current content strategy. This technology is a broad term that encompasses a wide range of technologies such as natural language processing,

ML, deep learning, computer vision, and many others. ML significantly impacts the digital marketing scenario because of its ability to analyse data and provide analytical tools.

6. Dhananjay Kumar Singh, Prof. Binod Pratap Singh(2025) discussed that the intersection of artificial intelligence (AI) and knowledge management (KM) is an area of great opportunity in that it will improve the ways such organizations appreciate and utilize information and information resources. Knowledge engineering processes that capture, store, retrieve, and disseminate knowledge effectively are facilitated by AI applications supported by technologies such as machinelearning, intelligent agents, and natural language processing.
7. Aron Witkowski &Andrzej Wodecki(2025) stated that the intersection of AI and product management presents substantial opportunities for research into the application of AI solutions to support product management activities.

Scope of study

This study looks at how Artificial Intelligence's used in different areas of management. It checks how technologies like machine learning, natural language processing, robotic process automation, predictive analytics and expert systems are used in organizations. The study wants to see how these technologies make organizations work better and make decisions. Artificial Intelligence helps organizations get an edge, over others. Organizations use Artificial Intelligence to improve how they work. Artificial Intelligence also helps with making choices. Organizations use machine learning and other technologies to make the most of Artificial Intelligence.

The study is mainly, about business organizations that use Artificial Intelligence technologies. This is happening in countries and smaller countries that are growing. The study looks at companies and smaller companies but it pays special attention to areas where Artificial Intelligence is used a lot, like when companies make things, sell things, deal with money and provide computer services. Business organizations that use Artificial Intelligence technologies are the focus of the study.

The research focuses on AI tools and systems that directly affect management jobs .It does not go into detail about the side of creating AI algorithms. Instead it looks at how AI affects management, job performance and strategic value. The study is about AI-driven tools and systems used in managerial functions. It checks their impact, on performance and strategic value.

Methodology

This study uses an approach to look at how Artificial Intelligence is used in different areas of management. The approach is used to show how Artificial Intelligence technologies are used in things like management, operations management, human resource management, marketing management, financial management and supply chain management. This helps us understand what is happening with Artificial Intelligence in management.

The research is done in a way relying on information that already exists. Information for the study comes from articles, books, conference papers, industry reports and business publications. Online databases like Google Scholar, SpringerNature, ScienceDirect and emerald insights were used to find recent information. The focus was on publications from the decade to make sure the study reflects what is happening now with Artificial Intelligence and management.

The information that was collected was looked at closely. Important topics like automation, decision support systems, predictive analytics, operational efficiency, human-Artificial Intelligence collaboration and ethical considerations were grouped according to the different areas of management. This method allowed for a comparison of how Artificial Intelligence's used in each area of management and also showed how it affects other areas.

Since the study only looks at information that already exist the findings are only as good as the information that's out there. No new information was collected through surveys, interviews or experiments. The study follows the rules of research by giving credit to all the sources that were used. Artificial Intelligence is a part of the study and it is important to understand how it is used in management. The study of Artificial Intelligence and its role, in management is crucial.

AI in Human Resource Management

Artificial Intelligence is changing the way we do Human Resource Management. It is doing things like automating tasks that we used to do ourselves and helping us make decisions. For example when we are hiring people Artificial Intelligence can look at all the resumes and pick out the best candidates. Websites like LinkedIn use Artificial Intelligence to find jobs that are a good fit for people looking for work.

Artificial Intelligence also helps us plan for the future evaluate how well people are doing their jobs and provide training that is tailored to each person's needs. It can even help us figure out how happy our employees are and automate tasks like paying people.

Using Artificial Intelligence makes things more efficient. Helps us make decisions based on facts. However Artificial Intelligence also raises some concerns. For instance we have to think about how we're protecting people's personal information and making sure that Artificial Intelligence is not biased. Artificial Intelligence also brings up issues that we need to consider. So even though Artificial Intelligence is really helpful we still need people to oversee things and make sure that Artificial Intelligence is being used in an responsible way in Human Resource Management. We need to make sure that Artificial Intelligence is used in a way that's good, for everyone.

AI in Finance.

Artificial Intelligence plays a role in modern financial management. It helps improve efficiency, accuracy and risk control. AI technologies like machine learning and predictive analytics are used for forecasting, budgeting and decision-making. These systems analyze amounts of financial data to find patterns and trends. This helps managers make decisions with the help of Artificial Intelligence.

Artificial Intelligence is widely used in fraud detection and risk assessment. Financial institutions use AI algorithms to monitor transactions in time and detect unusual activities.

For example companies like PayPal use AI-based systems to prevent transactions with Artificial Intelligence. AI is also used in credit scoring. Here customer data is analyzed to evaluate creditworthiness and reduce lending risks with the help of AI. In addition Artificial Intelligence supports trading. It analyzes market conditions. Executes trades automatically at high speed with AI. It also automates financial tasks.

Examples include invoice processing, financial reporting and customer service through chatbots with Artificial Intelligence.

Overall AI enhances performance, reduces operational costs and improves accuracy. However concerns about data privacy, cybersecurity and regulatory compliance remain challenges, with Artificial Intelligence.

AI in Marketing

Artificial Intelligence has changed the way companies do marketing. It helps them understand what customers want and like. This means they can give customers what they want and make decisions. Artificial Intelligence uses things like machine learning and natural language processing to look at a lot of customer data. This helps companies see what customers buy and what they like.

Companies can then make ads for certain customers. Artificial Intelligence is used by a lot to group customers together. Recommend things. For example Amazon uses Artificial Intelligence to suggest products to customers based on what they have looked at and bought before. Netflix does something where they use Artificial Intelligence to suggest movies and shows that customers might like. This makes customers happier and more likely to engage

Artificial Intelligence is also used to help customers at any time. It does this with chatbots that can answer questions and help customers. Artificial Intelligence helps companies figure out how things they will sell and how much to charge for them. It also helps them see if their ads are working. By looking at what's happening right now Artificial Intelligence helps companies make changes quickly and get a better return on what they spend. Even though Artificial Intelligence makes things more efficient and personalized there are still problems, with keeping customer data private and using it in a way.

AI in Supply Chain Management

Artificial Intelligence plays a role in making supply chain management better. It helps with efficiency, accuracy and responsiveness. Artificial Intelligence technologies like machine learning, predictive analytics and automation help organizations look at lots of data. This helps them forecast demand and plan inventory better. When companies predict customer demand accurately they can reduce stockouts and excess inventory. This lowers costs, makes customers

happier. Artificial Intelligence is also used to make logistics and transportation better. Intelligent algorithms find the delivery routes. They help reduce fuel consumption and minimize delays. For example companies like Amazon use Artificial Intelligence systems to make warehouse operations better. They streamline order fulfillment processes.

Similarly global logistics firms like DHL use Artificial Intelligence. They enhance tracking systems. Improve delivery efficiency. Artificial Intelligence also helps with risk management in supply chains. It identifies problems, like supplier delays or demand changes. It suggests solutions. Robotics and automation in warehouses make handling goods more accurate.

Overall Artificial Intelligence makes supply chains more visible. It reduces costs, improves performance.

Barriers of AI in Functional areas of Management

The use of Artificial Intelligence across areas of management is facing several big problems. One major problem is that it costs a lot to set up Artificial Intelligence systems. You need to spend a lot of money on technology and skilled workers. Medium-sized businesses often cannot afford to pay for advanced Artificial Intelligence solutions, which is why not many companies are using it.

Another big problem is that there are not skilled workers. To use Artificial Intelligence you need to know about data science, machine learning and analytics. Many companies do not have trained workers who can set up and use Artificial Intelligence systems properly. This lack of workers is slowing down the use of Artificial Intelligence in areas like human resources, finance, marketing and operations.

Artificial Intelligence systems also need a lot of data to work properly. If the data is not accurate or is missing the system will not work well. People are also worried about keeping their data safe and private in areas like finance and human resources where sensitive information is involved.

Some people do not want to use Artificial Intelligence because they are afraid it will replace their jobs. This fear of change is another problem. Companies also need to teach their workers about the benefits of Artificial Intelligence because many people do not understand how it can help.

There are also concerns about ethics and the law. For example if Artificial Intelligence systems are biased they can make decisions. This can lead to problems especially in areas like hiring workers or giving loans.

Finally it is hard to integrate Artificial Intelligence with the systems and processes that companies are already using. Many companies have systems that are not compatible with new Artificial Intelligence technologies, which makes it hard to switch to new systems.

Overall while Artificial Intelligence can bring benefits to different areas of management problems like money, lack of skilled workers, data issues, ethics and people not wanting to change are still big obstacles, to its successful use. Artificial Intelligence is still a technology and companies need to solve these problems to use it effectively.

Challenges of AI in Functional areas of Management

1. Data Privacy and Security

AI systems need to look at a lot of information from organizations and customers especially in areas like human resources and finance. We have to protect this information from cyberattacks and people who should not be looking at it. If someone gets into our system it can cause problems hurt our reputation and even get us in trouble with the law. Organizations have to make sure they have security systems and follow the rules to keep Data Privacy and Security safe when they use AI systems.

2. Ethical and Bias Issues

AI systems learn from data and if that data is not fair the AI system may not make fair decisions. For example some AI systems that help with hiring people may like some groups than others. Also many AI systems are like boxes, which means we do not really know how they make decisions. This makes it hard to understand why they make decisions and it raises concerns about being fair and responsible. AI systems have to be fair and not biased so we have to make sure the data they learn from is fair and not biased.

3. Integration with Existing Systems

A lot of organizations still use systems that do not work well with new AI technologies. It can be hard and expensive to combine AI tools with these systems. If we do not do it right it can disrupt the way we work and make things less efficient. Organizations often have to update their systems and change the way their IT department works to make AI systems work properly with their existing systems.

4. Lack of Clear Strategy

If we start using AI without a plan we might waste our time and money. Organizations might buy AI technologies without knowing what they want to achieve or how they will use them. If we do not have a leader to support us and a clear plan AI projects might not work as well as we want them to across different areas of management. We have to have a strategy for using AI systems.

5. High Dependence on Data Quality

AI systems need data to work properly. If the data is old, incomplete or wrong AI systems might give us wrong information. If we do not take care of our data it can affect the decisions we make in areas like finance, marketing and human resources. So we have to make sure we have data and take care of it. Data Quality is very important for AI systems to work properly.

6. Workforce Displacement Concerns

AI can automate some jobs. This makes people worry about losing their jobs Employees get unhappy. Do not want to use AI. Companies must help their workers learn skills to work with AI technology. We need to think about our employees. How AI affects them. We have to consider workforce displacement concerns when we implement AI systems.

7. Regulatory and Compliance Issues

When we use AI we have to follow a lot of rules about protecting data, consumer rights and being transparent about how AI systems work. These rules can be different in countries and industries which can make it hard to follow them. If we do not follow the rules we can get in trouble. Have to pay penalties. We have to make sure we follow all the rules and regulations when we implement AI systems.

8. Technological Changes

AI technology is always changing, so organizations have to keep updating their systems and teaching their employees new skills. This can be expensive and time-consuming. Companies have to keep investing in training and improving their systems to stay competitive and get the most out of AI. We have to stay up, to date with the AI technology and Continuous Technological Changes.

Overall while AI can help us in ways we have to be careful and manage these challenges so we can use AI in a responsible and effective way. We have to think about AI systems and how they will affect our organizations and the people who work for us.

Findings

The study shows that Artificial Intelligence makes companies work better in areas like marketing and finance. Artificial Intelligence helps companies make decisions faster by looking at a lot of data. This means companies that use Artificial Intelligence do things efficiently and make their customers happier.

Artificial Intelligence also helps companies do better than their competitors. However using Artificial Intelligence can be expensive to set up. It can be hard to find people who know how to use Artificial Intelligence. Sometimes the data is not good. There are concerns, about security. The study says that Artificial Intelligence works best when it is used in a way to help people make decisions not to replace them.

Conclusion

Artificial Intelligence has become a factor in many areas of management like human resources and finance and marketing and operations and supply chain management. It helps organizations work better by doing tasks that people used to do making mistakes and letting managers make decisions faster using data. Artificial Intelligence tools help managers figure out what people will want, manage risks, make customers happy, use resources wisely and help employees do better. So organizations that use Artificial Intelligence will get ahead of others ,do work and have a better plan.

At the time using Artificial Intelligence in management is not easy. It can be expensive to start using Artificial Intelligence. It is hard to find people who know about Artificial Intelligence and the data might not be good and there are security risks and people might not want to change. Organizations have to plan have leaders who are committed and train people all the time to overcome these problems. Also organizations have to be fair and honest when they make decisions using Artificial Intelligence so that employees and others trust them.

Artificial Intelligence should not replace managers but it should help them. People are still needed to make decisions because they can think critically and be creative and understand emotions and make choices. When Artificial Intelligence and humans work together it works better than using machines.

In the end Artificial Intelligence can really improve many areas of management. To be successful, for a time organizations need to have a plan that uses new technology and is fair and helps employees learn and get better all the time. If organizations use Artificial Intelligence in a way it can help them grow and innovate and be excellent.

References

1. Davenport, T. H., & Ronanki, R. (2018). *Artificial Intelligence for the Real World*. Harvard Business Review, 96(1), 108–116. <https://hbr.org/2018/01/artificial-intelligence-for-the-real-world>
2. Chaffey, D., & Ellis-Chadwick, F. (2019). *Digital marketing: Strategy, implementation and practice* (7th ed.). Pearson Education. Retrieved from <https://www.pearson.com/en-us/subject-catalog/p/digital-marketing/P200000012456/9781292470061>
3. Heizer, J., Render, B., & Munson, C. (2020). *Operations Management: Sustainability and Supply Chain Management* (13th ed.). Pearson Education. <https://www.pearson.com/en-us/subject-catalog/p/operations-management-sustainability-and-supply-chain-management/P200000005918/9780135225936>

4. *"The Business of Artificial Intelligence"* by Erik Brynjolfsson & Andrew McAfee — **Harvard Business Review, July 18, 2017:**
<https://hbr.org/2017/07/the-business-of-artificial-intelligence>

5. *"Applying artificial intelligence: implications for recruitment"* by **Ashwani Kumar Upadhyay & Komal Khandelwal** — published in **Strategic HR Review (2018)**.
<https://www.emerald.com/insight/content/doi/10.1108/SHR-07-2018-0051/full/html>

6. RahulKumarBudania.(2025). ROLE OF ARTIFICIAL INTELLIGENCE IN MANAGEMENT.
https://www.researchgate.net/publication/397526260_ROLE_OF_ARTIFICIAL_INTELLIGENCE_IN_MANAGEMENT

7. Sandhya Thumma.(2024). Vignan's Foundation for Science, Technology & Research. The Application of Artificial Intelligence in Management: A Comprehensive Review
<https://share.google/zVEAxCGM7OTYkFQ8k>

8. Anubhav Mishra and Monika Sharma.(2023) "Artificial Intelligence and its impact on different business functions," DOI: <https://doi.org/10.57198/2583-4932> .

9. Dr. Manisha Garg, Ms. DevishiGarg.(2025). Artificial Intelligence In Management: A Study On Its Role, Adoption, And Managerial Implications, Government College for Women, Sirsa (Haryana)<https://www.ijcrt.org/papers/IJCRT2512553.pdf>

10. Abid Haleem, Mohd Javaid, Mohd Asim Qadri , **Ravi Pratap Singh , Rajiv Suman .(2022).** **Artificial intelligence (AI) applications for marketing: A literature-based study**<https://doi.org/10.1016/j.ijin.2022.08.005>

- 11.Dhananjay Kumar Singh1 , Prof. Binod Pratap Singh2, Role of Artificial Intelligence in Business Management (2025)
<https://ijisem.com/journal/index.php/ijisem/article/download/149/191/717>

- 12.[Aron Witkowski](#) &[Andrzej Wodecki](#)(2025) Where does AI play a major role in the new product development and product managementprocess?<https://link.springer.com/article/10.1007/s11301-025-00533-5#Abs1>

AI IN STRATEGIC MANAGEMENT-ITS DECISION IMPACT ON EMPLOYEES PRODUCTIVITY

AUTHOR: Samhita M

Ph. no: 9886237792

AUTHOR: Yashaswini L

Ph. no: 9743239464.

E-mail : samhitamurali23@gmail.com

yashaswiniloganathan2006@gmail.com

2nd B Com, C

Seshadripuram Institute of Commerce and Management

ABSTRACT:

Artificial Intelligence (AI) is increasingly transforming strategic management practices across corporate organizations. This study examines the impact of AI-driven strategic management on corporate employees' productivity in Karnataka State, particularly within Bengaluru's IT and corporate ecosystem. Using empirical analysis and secondary data from major firms such as Wipro, Infosys, Flipkart, Accenture, Google India, and Hindustan Unilever Limited, the research identifies measurable productivity improvements ranging from 15% to 126%. The findings indicate that AI enhances strategic decision-making, predictive analytics, operational optimization, and workforce allocation. Additionally, AI adoption is reshaping employee roles from routine execution to strategic supervision and innovation. While AI significantly boosts productivity and strategic agility, the study also highlights governance, ethical, and reskilling challenges. Overall, AI-driven strategic management is found to positively influence corporate employee productivity when implemented responsibly and aligned with organizational strategy.

INTRODUCTION:

MEANING OF AI:

Artificial intelligence (AI) is technology that enables computers and machines to stimulate human intelligence, allowing them to learn from experience, understand language, recognize patterns, and make decisions. Instead of just following pre-programmed instructions, AI systems analyze data to solve problems and perform tasks that usually require human cognition.

Example: Personalized recommendations, health care, transportation and mainly in business expansions.

MEANING OF STRATEGIC MANAGEMENT:

Strategic management is the continuous process of planning, monitoring, analyzing, and assessing all necessities an organization needs to meet its goals and objectives. It serves as a bridge between an organization's high-level vision and its daily operations.

HOW AI IS USED IN STRATEGIC MANAGEMENT:

AI tools revolutionize strategic management by accelerating data analysis, enhancing decision-making accuracy, and enabling predictive forecasting to gain competitive advantages. They process vast structured and unstructured datasets to uncover hidden patterns, optimize resource allocation, automate routine tasks, and monitor KPIs in real-time, allowing leaders to refine strategies and respond swiftly to market shifts.

Here is how AI tools are specifically helpful in strategic management:

1. Enhanced Strategic Decision-Making:

AI analyzes immense datasets—including market trends and consumer behavior—to identify patterns that human analysts might miss, reducing cognitive bias and error in high-stakes decisions.

2. Predictive Analytics and Forecasting:

AI tools use machine learning to forecast market trends, anticipate consumer needs, and model potential, future scenarios, allowing for proactive strategy adjustment rather than reactive.

3. Environmental Scanning and Competitive Intelligence:

AI monitors external environments, such as news and social media, to track competitor activities, industry signals, and stakeholder sentiment, ensuring strategies align with current realities.

4. Operational Optimization and Resource Allocation:

AI-driven automation streamlines supply chains, optimizes pricing strategies, and identifies inefficiencies, which allows for better resource allocation and improved operational efficiency.

5. Real-Time Monitoring and Strategic Agility:

AI powers dashboards that monitor KPIs in real-time, providing immediate feedback on strategy effectiveness and enabling prompt, corrective actions.

6. Process Automation:

By automating repetitive tasks like data entry and reporting, AI frees up management resources to focus on higher-level strategic planning.

LITERATURE REVIEW:

- Erik Brynjolfsson and Andrew McAfee (2017) state that Artificial Intelligence (AI) enhances productivity, automation, and data-driven decision-making in businesses.
- Thomas H. Davenport and Rajeev Ronanki (2018) emphasize that AI creates value when aligned with organizational strategy rather than used as a standalone tool.
- Jay Barney (1991) explains through the Resource-Based View that AI can become a source of sustained competitive advantage.
- David J. Teece (2018) highlights that AI strengthens dynamic capabilities and organizational adaptability.
- Raghvendra, Tulika Saxena, Devesh Ranjan Tripathi, and Rashi Jain (2024) state that AI enhances strategic management through predictive analytics, CRM integration, and resource optimization, improving competitiveness during crises.

Erik Brynjolfsson and Andrew McAfee (2017) highlight AI's role in boosting productivity and reshaping business models.

Thomas H. Davenport and Rajeev Ronanki (2018) emphasize strategic alignment for AI success. Literature also identifies risks including data bias, transparency issues, and governance challenges, stressing responsible AI adoption. Overall, literature indicates that AI improves efficiency and forecasting accuracy while raising ethical and governance concerns.

RESEARCH METHODOLOGY:

Research Method:

This Study adopts Empirical research to examine the impact on Corporate employees productivity.

OBJECTIVE:

- To understand the role of Artificial Intelligence in strategic management.
- To examine how AI adoption influences corporate employees' productivity.
- To analyze productivity changes in selected corporate organizations in Karnataka.
- To study the transformation of employee roles due to AI integration.
- To identify challenges and risks associated with AI-driven strategic management.

SCOPE:

This Study focuses on examining the Impact of Artificial intelligence in Strategic Management on Corporate Employees Productivity in Karnataka State.

DATA ANALYSIS AND INTERPRETATION:

COMPANY	REPORTED PRODUCTIVITY GAINS(2025-2026)	SPECIFIC IMPACT ON EMPLOYEES
WIPRO	40% reduction in development effort.	12000 SAP consultants now use “JOULE” AI,saving 7 million hours annually.
INFOSYS	126% increase in coder productivity.	AI-assisted developers are completing tasks over 2x faster than those without.
FLIPKART	15% boost in resolution rates.	Customer support staff resolves complex issues 15% faster per hour using GenAI.
ACCENTURE	2.4x better productivity.	Companies scaling AI (like Accenture’s Bangalore hub) are outperforming peers in output-per-head.

COMPANY	PRODUCTIVITY FOCUS	IMPACT ON WORKFORCE
WIPRO	Consulting hours.	7 million hours saved; consultants act as AI “Orchestrators”.
INFOSYS	Code and SDLC.	126% more output; shift to “Reviewer” roles.
FLIPKART	Logistical Speed.	15% faster resolution; “Employee-led” AI innovation.
ACCENTURE	Daily Adoption.	AI usage is a Key Performance Indicator(KPI) for promotion.

Google India, particularly through its large hubs in Bengaluru, has integrated AI deeply into its corporate strategy. While Google does not typically publish a single "Productivity Graph" for

Karnataka-specific employees on their public website, their 2025 and 2026 corporate reports provide significant data on how AI is reshaping their workforce and strategic management.

1. AI Impact on Employee Productivity:

Google's internal and external research (including the 2025 DORA Report) shows a massive shift in how their corporate teams operate:

- **Developer Efficiency:** As of 2025, over 90% of Google's software development workforce uses AI daily. Teams report spending a median of two hours a day using AI to assist in coding, which has led to a significant increase in code quality and deployment frequency.
- **Agentic AI in Management:** Google is shifting toward "Agentic AI"—systems that can reason and perform multi-step tasks. In corporate management, these agents are used to automate complex data analysis, reducing the time managers spend on manual reporting by an estimated 30%.
- **Global Business Organization (GBO) Impact:** In early 2026, Google noted that AI is having its greatest impact on "Solutions teams" and "Sales." The company is currently reorienting these roles to focus on "high-value strategic work" rather than administrative support.

2. Strategic Management & Hub Expansion in Karnataka

Karnataka remains the "AI Capital" for Google in India. Recent strategic moves include:

- **Office Expansion:** In February 2026, reports indicated Google is looking to acquire 2.4 million sq. ft. of additional office space in Bengaluru to house its expanding AI-focused teams.
- **AI Workforce Impact Survey:** Google is a key participant in the Karnataka Government's 2025 AI Workforce Impact Study, which maps how AI is changing job roles and productivity across the state's tech sector.
- **Strategic Reorganization:** Google has begun offering voluntary exits to employees whose roles are being most heavily impacted by AI automation, while simultaneously doubling down on hiring for "AI-First" strategic roles.
- **Based on global findings from Google cloud (2025),** Google adopting AI in strategic management have observed significant improvement in corporate employees. Applying these findings to Karnataka's (Bengaluru IT) ecosystem similar productivity can be expected due to AI transformation in strategic management or decision.

Humanity hasn't changed in the work environment, but people are more comfortable using AI to fill gaps in their abilities."



Natalie Bowman

Managing Director, Product & Experience Design, Alaska Airlines



Employee productivity re-imagined

Among executives reporting increased productivity, a higher share reported non-IT improvements year-over-year.²⁶ Employee productivity is up, though expectations on improved time to market through AI are down.

70%

report improved productivity (vs. 71% in 2024)²⁶

39%

of executives reporting increased organizational productivity indicate their employee productivity has at least doubled as a result of gen AI (vs. 45% in 2024)²⁷

Key area where AI is driving ROI now

39%

saw ROI on gen AI use cases for individual productivity (emails, documents, presentations, meetings, chat) (vs. 34% in 2024)²⁸

Improved employee productivity from gen AI



Source: McKinsey, "The Business Value of Generative AI: A Case Study Analysis for Leaders," 2024. McKinsey & Company. © 2024 McKinsey & Company. All rights reserved.

McKinsey & Company's research is based on data from a survey of 1,000 executives in 2024. The survey found that 70% of executives reported improved productivity from gen AI in IT processes and staff productivity, 61% reported faster time to insight, 60% reported improved productivity in non-IT processes and staff productivity, 58% reported better accuracy, and 48% reported faster time to market. The survey also found that 39% of executives reported improved individual productivity from gen AI use cases for emails, documents, presentations, meetings, and chat, up from 34% in 2024. The survey was conducted by McKinsey & Company in partnership with the AI Index at Stanford University.

With Google Cloud, businesses saw:

\$250k

in average annual benefits per 1,000 employees

50%

more productive developers

36%

more productive end users

Source: McKinsey & Company, "The Business Value of Google Cloud: A Case Study Analysis for Leaders," 2024. McKinsey & Company. © 2024 McKinsey & Company. All rights reserved.

727%

ROI achieved over three years on average by businesses with Google Cloud

Source: McKinsey & Company, "The Business Value of Google Cloud: A Case Study Analysis for Leaders," 2024. McKinsey & Company. © 2024 McKinsey & Company. All rights reserved.



With new low-code tools, our experts in marketing, finance, or operations can build their own simple AI helpers to solve their specific problems."



Francis Pugeda

Director, AI Product Development, Globe Telecom

Use an AI agent to:

Analyze data instantaneously

Objective

Get insights from data stored in a Google Sheet to make better informed decisions.

Action

Open the side panel of a Sheet that contains the data you're looking to better understand and click on the suggested prompt to analyze the data, which will automatically review and analyze it to provide an overview and insights.

Try this prompt



SOURCE:Google cloud website

Unilever and its Indian subsidiary, Hindustan Unilever Limited (HUL), have integrated AI into their strategic management and operations, showing a significant impact on employee productivity.

While the company does not typically publish specific "productivity graphs" for a single region like Karnataka alone, they have released global and national-level data that includes their large corporate and manufacturing hubs in Karnataka (specifically Bengaluru).

1. AI Impact on Employee Productivity:

Unilever's 2024–2025 reports highlight several key areas where AI has boosted workforce performance:

- **Workforce Allocation:** HUL has implemented an AI-powered workforce allocation tool that has improved labor productivity by nearly 400% in pilot sites. This tool dynamically assigns employees to high-priority production lines based on real-time skills and experience data.
- **Talent & Skills:** In their 2025 updates, Unilever reported that prioritizing talent through digital tools led to a 28% improvement in productivity and operational health.
- **Reducing "Drudgery":** AI is used to automate routine administrative tasks, which Unilever claims "frees up employees to focus on higher-value tasks" like brand growth and strategic innovation.
- **Retention & Engagement:** HUL uses AI-driven analytics to predict employee turnover. In corporate offices (like the Bengaluru hub), this has helped reduce turnover by up to 25% by intervening with tailored support programs.

2. AI in Strategic Management (Bangalore Hub):

Bengaluru is home to one of Unilever's most critical global centers: Unilever's Digital & Technology hub. Strategic management there focuses on:

- **Integrated Operations:** Using AI to connect consumer demand directly to manufacturing. This has resulted in a one-third reduction in "Go-To-Market" (GTM) lead times.
- **Beauty AI Studio:** A system that enables teams to create marketing assets 30% faster than traditional methods by using generative AI for content ideation and personalization.
- **Recipe Intelligence:** Used specifically in the food solutions division to predict consumer trends and optimize product portfolios strategically.

3. Data from Official Reports

HUL's Integrated Annual Report 2024-25 and the 2024 Global Annual Report include "Net Productivity" as a core pillar. While they don't provide a line graph for Karnataka-specific employees, they report the following global/national metrics:

- **AI Training:** By the end of 2024, Unilever trained 23,000 employees in AI usage to ensure the workforce remains "future-fit."
- **Lighthouse Factories:** Their AI-driven "Lighthouse" sites (including those in India) show an average 27% improvement in productivity metrics from 2020 to 2024.

"We are moving from being a company that uses AI to being an AI-first organization. In our Bangalore hub, this means shifting 80% of routine corporate tasks to automated systems, allowing our leaders to focus purely on strategic growth."

— General sentiment from HUL Leadership (Investor Meets)

FINDINGS AND SUGGESTIONS:

FINDINGS:

The empirical analysis reveals the following key findings:

1. **Significant Productivity Gains:** Companies reported measurable productivity improvements:
 - 40% reduction in development effort (Wipro).
 - 126% increase in coding productivity (Infosys).
 - 15% faster issue resolution (Flipkart).
 - 2.4x productivity improvement (Accenture).
2. **Reduction in Manual Work:**

AI automation reduced repetitive tasks such as reporting, scheduling, and administrative work.
3. **Role Transformation:**

Employees are shifting from operational roles to analytical and supervisory roles such as AI reviewers, orchestrators, and strategic planners.
4. **Real-Time Decision Support:**

AI-enabled dashboards improved strategic responsiveness and KPI monitoring.
5. **Reskilling Requirement:**

Companies investing in AI training programs (e.g., thousands of employees trained) show stronger productivity growth.
6. **Ethical and Governance Concerns:**

Data bias, transparency, and workforce displacement remain key concerns.

SUGGESTIONS:

The findings support the theoretical perspectives of Erik Brynjolfsson and Andrew McAfee (2017), who argue that AI enhances productivity through automation and data-driven decisions. The results also align with Thomas H. Davenport and Rajeev Ronanki (2018), emphasizing that AI creates value when strategically aligned.

From a Resource-Based View perspective proposed by Jay Barney (1991), AI serves as a rare and valuable organizational resource that provides sustained competitive advantage.

Furthermore, the dynamic capabilities theory of David J. Teece (2018) is evident, as AI strengthens adaptability and responsiveness to market changes.

However, the study also reveals that productivity gains depend on:

- Strategic alignment.
- Leadership commitment.
- Employee reskilling.
- Ethical AI governance.

Without proper governance, AI adoption may lead to job displacement anxiety and resistance among employees.

CONCLUSION:

The study concludes that Artificial Intelligence in strategic management significantly enhances corporate employees' productivity in Karnataka's corporate ecosystem. Organizations adopting AI report improved operational efficiency, faster decision-making, and measurable output gains. AI not only automates routine tasks but also transforms employee roles toward higher-value strategic functions. However, successful implementation requires responsible governance, continuous employee training, and alignment with organizational goals.

Therefore, AI in strategic management is largely a strategic enabler and productivity multiplier, rather than a threat, when implemented with ethical oversight and workforce inclusion.

REFERENCES:

- Asiabar, M. G., & Asiabar, A. G. (2024). Artificial intelligence in strategic management: Examining novel AI applications in organizational strategic decision-making. Preprints.org. <https://doi.org/10.20944/preprints202409.1330.v1>
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99–120. <https://doi.org/10.1177/014920639101700108>

- Brynjolfsson, E., & McAfee, A. (2017). The business of artificial intelligence. *Harvard Business Review*, 95(1), 62–72.
- Company Source of Data Reported Productivity Change
 - Wipro SAP/Wipro Joint Study 40% reduction in dev effort; 7M hours saved.
 - Infosys Feb 2026 Analyst Meet 126% increase in specific coding output.
 - Accenture Internal Policy (FT/ET) AI usage is now a mandatory KPI for promotion.
 - Flipkart CEO Townhall/Q1 Reports 6X
- Davenport, T. H., & Ronanki, R. (2018). Artificial intelligence for the real world. *Harvard Business Review*, 96(1), 108–116.
- Ghorbani Asiabar, M., Ghorbani Asiabar, M., & Ghorbani Asiabar, A. (2024). Artificial Intelligence in Strategic Management: Examining Novel AI Applications in Organizational Strategic Decision-Making. Preprints. <https://doi.org/10.20944/preprints202409.1330.v1>
- Teece, D. J. (2018). Dynamic capabilities as (workable) management systems theory. *Journal of Management & Organization*, 24(3), 359–368.
<https://doi.org/10.1017/jmo.2017.75>

“A Study on the Role of Artificial Intelligence in Urban UG Colleges in Bangalore City With special reference to Seshadripuram Institute of Commerce & Management Seshadripuram, Bengaluru”

AUTHOR: KARTHICK K., STUDENT, LIBRARY COORDINATOR

Final year BCOM ‘A’ Section

Seshadripuram Institute of Commerce & Management

Seshadripuram, Bengaluru

Mob: 80955250885. E-mail: karthicknaidu988@gmail.com

Co-Author: RAVI KUMAR M. Librarian

Seshadripuram Institute of Commerce & Management

Affiliated to Dr. Manmohan Singh Bengaluru City University

Seshadripuram, Bengaluru.

Mob: 9844959695, e-mail: sicmlibrary@gmail.com

Co-Author: RASHMI R. ‘Asst’ Librarian

Seshadripuram Institute of Commerce & Management

Affiliated to Dr. Manmohan Singh Bengaluru City University

Seshadripuram, Bengaluru

Mob: 9164678583, e-mail: sicmlibrary@gmail.com

Abstract

To examine how Artificial Intelligence (AI) supports teaching, learning, and administrative efficiency in Urban UG colleges in Bangalore City. Design, Methodology and descriptive research using survey questionnaires from UG students and faculty, simple ratio and chart analysis. AI tools improve learning engagement, quick access to information, and academic performance, however challenges include lack of training and infrastructure.

Keywords: Artificial Intelligence, Urban UG Colleges, Student Perception, AI in Education, Personalized Learning, Academic Performance, Educational

Introduction

Artificial Intelligence (AI) has emerged as a transformative technology in the field of education, reshaping traditional teaching and learning practices. In recent years, urban undergraduate (UG) colleges have increasingly adopted AI-based tools such as virtual learning platforms, chatbots, automated assessment systems, and personalized learning applications to enhance academic outcomes and institutional efficiency. These technologies enable students to access instant information, receive customized feedback, and engage in interactive learning experiences beyond the conventional classroom environment.

In a rapidly developing educational hub like Bangalore City, the integration of AI in higher education has gained significant attention due to the city’s strong technological infrastructure and exposure to digital innovations. Urban UG colleges in Bangalore are gradually incorporating AI-driven solutions to support smart classrooms, digital content delivery, and data-driven academic decision-making. This shift reflects the growing need to align higher education with Industry 4.0 requirements and to prepare students with technological competencies essential for the modern workforce.

Despite its growing adoption, the effective utilization of AI in urban colleges depends largely on students’ awareness, accessibility to digital resources

Materials and methods Sample

The study is based on a sample of 120 undergraduate (UG) students selected from various urban UG colleges in Bangalore City. A stratified random sampling method is adopted to ensure equal representation of students from commerce, science streams. This approach helps in obtaining diverse opinions regarding the usage and impact of Artificial Intelligence (AI) in higher education.

Data collection and research instruments

Both primary and secondary data are used for the study. Primary data are collected through a well-structured questionnaire administered to UG students. The questionnaire consists of close-ended and Likert scale questions focusing on awareness, frequency of AI usage, perceived benefits, and challenges in using AI-based educational tools. Secondary data are gathered from research journals, books, institutional reports, and authentic online academic sources related to AI in education. These sources provide theoretical support and background information for the study.

Analysis

The collected data were systematically classified, tabulated, and analyzed to understand the role of Artificial Intelligence (AI) in urban UG colleges. Percentage analysis was primarily used to interpret the responses of students regarding their awareness, usage frequency, benefits, and challenges of AI in education. The results were presented through pie diagrams to provide a clear visual representation of the distribution of responses. The pie charts illustrated the proportion of students who are aware of AI tools such as chatbots, virtual assistants, and online learning platforms. Analysis of the diagrams showed that a majority of students have basic awareness and regularly use AI applications for academic purposes such as assignments, presentations, and exam preparation. A significant percentage of respondents agreed that AI helps in quick access to information, personalized learning, and improving academic performance. Further analysis of the charts relating to usage frequency revealed that many students frequently depend on AI tools for clarifying concepts and completing coursework efficiently. However, a smaller proportion of students reported limited usage due to lack of technical skills, inadequate institutional support, or concerns about over-dependence on AI technologies. The diagrams also highlighted students' perception regarding the effectiveness of AI in enhancing engagement and interactive learning. Most respondents expressed a positive opinion that AI-based learning platforms make the teaching–learning process more interesting and flexible. At the same time, some pie charts indicated challenges such as lack of proper training, reliability issues, and fear of reduced critical thinking skills.

Overall, the graphical analysis through pie diagrams clearly demonstrates that Artificial Intelligence plays a supportive and emerging role in urban UG colleges by improving learning efficiency and access to knowledge, while also indicating the need for better infrastructure, awareness programs, and guided usage to maximize its educational benefits in institutions located in Bangalore City.

1. Digital Literacy Level:

The pie chart indicates that 48.1% of students possess an intermediate level of digital literacy, while 37% are beginners and only 14.8% consider themselves advanced users. This suggests that

most students have a moderate level of digital competence, which supports the adoption of AI tools in their academic activities, though there is still scope for improving advanced digital skills.

2. Awareness of AI Tools in Education:

A large majority of respondents (77.8%) reported that they are aware of AI tools used in education. About 20.4% stated that they are somewhat aware, while only a very small proportion indicated lack of awareness. This result reflects a high level of exposure to AI technologies among UG students in urban colleges.

3. AI Tools Utilized in Studies:

The findings reveal that 81.5% of students primarily use ChatGPT as their preferred AI tool for academic purposes. A smaller percentage of students use other tools such as Gemini (9.3%), while very few respondents reported using tools like Quillbot, Grammarly, Canva, and Meta AI. This shows that conversational AI platforms are the most popular and widely adopted tools among students for learning and academic support.

4. Frequency of Using AI Tools:

The chart on usage frequency shows that 35.2% of students use AI tools weekly, 33.3% use them daily, and 24.1% use them occasionally. Only 7.4% of respondents reported rare usage. This indicates that AI tools are regularly integrated into students' academic routines, highlighting their growing importance in everyday learning practices.

5. Purpose of Using AI Tools:

The majority of students (61.1%) use AI tools mainly for completing assignments, indicating that AI plays a major role in academic task completion. Around 40.7% of respondents use AI for research support, while 33.3% depend on AI for exam preparation. About 31.5% of students use AI tools for preparing presentations. Only a very small percentage (1.9%) reported using AI merely for general information. This shows that AI is primarily utilized for core academic activities rather than casual use.

6. AI Tools and Learning Efficiency:

The findings reveal a strong positive perception towards AI in learning. Nearly 48.1% of students strongly agree that AI tools make them more efficient in learning, and 37% agree with the statement. About 14.8% of respondents remain neutral, and almost no students disagreed. This indicates that the majority believe AI significantly enhances their learning efficiency, understanding of concepts, and speed of completing academic work.

7. Challenges Faced While Using AI Tools:

Despite the advantages, students also reported certain challenges. The highest proportion (38.9%) indicated lack of awareness as a major issue, followed closely by 37% who faced technical difficulties while using AI tools. Around 18.5% of respondents expressed ethical concerns regarding the use of AI. A very small percentage mentioned problems such as receiving incorrect information and lack of direct human interaction. These results suggest that while AI is beneficial, proper training and technical support are required for effective usage.

Discussion

The findings of the study provide significant insights into the growing role of Artificial Intelligence (AI) in urban undergraduate (UG) colleges in Bangalore City. The results reveal that students possess moderate digital literacy, with the majority at an intermediate level, which enables them to adopt AI tools for academic purposes. However, the relatively lower proportion of advanced users suggests the need for institutional initiatives to enhance students' higher-level digital competencies and effective AI utilization skills. The study shows a high level of awareness of AI tools among students, indicating that AI technologies have become familiar components of modern educational environments. This awareness is reflected in the extensive usage of AI

applications, particularly conversational tools such as ChatGPT, which emerged as the most commonly used platform for academic support. The dominance of such tools highlights the shift towards interactive and on-demand learning resources that provide quick explanations, content generation, and conceptual clarity. The frequency analysis indicates that a considerable proportion of students use AI tools either daily or weekly, demonstrating that AI has become an integral part of their regular academic workflow. This consistent usage suggests that students perceive AI as a reliable support system for enhancing productivity, saving time, and simplifying complex academic tasks. The major purposes identified—assignments, research support, presentations, and exam preparation—further confirm that AI is being used for core educational activities rather than mere casual information searching. Another important aspect emerging from the findings is the positive perception of AI in improving learning efficiency. Most students agreed that AI tools enhance understanding and engagement, supporting personalized and self-paced learning. This aligns with the broader view that AI-driven educational tools facilitate interactive learning experiences and immediate feedback, which contribute to improved academic performance. Despite these advantages, the study also highlights several challenges faced by students while using AI tools. Lack of awareness and technical difficulties were reported as the most significant issues, indicating that students may not be fully trained in utilizing AI effectively. Ethical concerns, including over-dependence on AI and reliability of information, were also noted, emphasizing the importance of responsible and guided usage. Minor issues such as occasional incorrect information and lack of direct human interaction further point to the limitations of AI as a supplementary rather than a replacement tool in education. The strong support expressed by students for integrating AI tools into institutional library services suggests a growing demand for formal adoption of AI-enabled academic resources. This reflects students' expectation that colleges should provide structured access to AI platforms, digital repositories, and smart learning environments to enhance research and learning practices.

Overall, the discussion indicates that Artificial Intelligence is playing a transformative and supportive role in urban UG colleges by improving academic efficiency, engagement, and accessibility of knowledge. However, to fully realize its potential, colleges need to focus on improving digital literacy, providing technical training, ensuring ethical awareness, and strengthening infrastructure for effective and responsible integration of AI in higher education.

Conclusion

The study concludes that Artificial Intelligence (AI) plays a significant and supportive role in enhancing the teaching–learning process in urban undergraduate (UG) colleges in Bangalore City. The findings indicate that most students are aware of AI tools and actively use them for academic purposes such as assignments, research, presentations, and exam preparation. The frequent usage of AI applications, especially conversational tools, shows that AI has become an integral part of students' daily learning activities. The results also reveal that students generally perceive AI as an effective tool that improves learning efficiency, saves time, and provides quick access to information. Moderate levels of digital literacy among students further support the adoption of AI in academic work, although the lower proportion of advanced users highlights the need for improved digital skill development.

Despite the positive impact, the study identifies certain challenges such as lack of awareness about effective usage, technical difficulties, and ethical concerns related to reliability and over-

dependence on AI tools. These issues indicate that while AI offers numerous benefits, its implementation requires proper guidance, training, and responsible usage practices.

Overall, the study concludes that AI has the potential to transform higher education in urban UG colleges by enhancing academic productivity and personalized learning experiences. However, to maximize its effectiveness, educational institutions should focus on improving digital literacy, providing technical infrastructure, and integrating AI-based resources in library and learning systems. This will ensure balanced, ethical, and efficient utilization of AI in the academic environment.

Authors' Contribution The author conceptualized and designed the study, developed the questionnaire, collected and analyzed the data, and prepared the manuscript. All stages of the research, including interpretation of results and final editing, were carried out by the author.

Funding

This research received no external funding and was conducted as part of an academic study.

Institutional Review Board Statement

The study was conducted in accordance with ethical academic research standards. As the research involved voluntary student participation through a questionnaire survey, formal institutional ethical approval was not required.

Informed Consent Statement

Informed consent was obtained from all participants prior to data collection. Respondents were informed about the purpose of the study and assured that their responses would be used only for academic research purposes.

Data Availability Statement

The data used in this study are available from the author upon reasonable request for academic and research purposes.

Conflicts of Interest

The author declares no conflict of interest regarding the publication of this research paper

References

- Artificial Intelligence: A Modern Approach – Russell, S., & Norvig, P. (2021). Pearson Education.
- Holmes, W., Bialik, M., & Fadel, C. (2019). Artificial Intelligence in Education: Promises and Implications for Teaching and Learning. Center for Curriculum Redesign.
- UNESCO (2021). AI and Education: Guidance for Policy-makers. UNESCO Publishing.
- OECD (2021). Digital Education Outlook: Pushing the Frontiers with AI, Blockchain and Robots. OECD Publishing.
- Luckin, R. (2018). Machine Learning and Human Intelligence: The Future of Education for the 21st Century. UCL Institute of Education Press.
- Chen, L., Chen, P., & Lin, Z. (2020). Artificial Intelligence in Education: A Review. IEEE Access, 8, 75264–75278.
- World Economic Forum (2020). Schools of the Future: Defining New Models of Education for the Fourth Industrial Revolution.
- Zawacki-Richter, O., Marin, V. I., Bond, M., & Gouverneur, F. (2019). Systematic Review of Research on Artificial Intelligence Applications in Higher Education. International Journal of Educational Technology in Higher Education, 16(39).
- Government of India (2020). National Education Policy 2020. Ministry of Education.

Baker, R. S., & Smith, L. K. (2019). Educ-AI-tion Rebooted? Exploring the Future of Artificial Intelligence in Schools and Colleges. Nesta Foundation.

Roll, I., & Wylie, R. (2016). Evolution and Revolution in Artificial Intelligence in Education. *International Journal of Artificial Intelligence in Education*, 26(2), 582–599.

McKinsey & Company (2021). The Future of Work and Education in the Age of AI.

AI as a futuristic tool for Creative Writing: The Evolution of English Creative Writing in the Age of Artificial Intelligence

Author: Samhita M

Ph. No: 9886237792

Seshadripuram Institute of Commerce and Management

No.40, Girls School St, 4th Block, Kumara Park West, Seshadripuram, Bengaluru,
Karnataka 560020

Email: samhitamurali23@gmail.com

Abstract:

Artificial Intelligence (AI) has become one of the most influential technological innovations of the contemporary era, significantly transforming various sectors including education, communication, business, and the creative industries. In recent years, its expansion into the domain of English creative writing has generated considerable academic interest and debate. Creative writing has traditionally been viewed as a uniquely human endeavour shaped by imagination, emotional depth, personal experience, and cultural context. However, the emergence of advanced AI-driven language systems capable of producing structured narratives, poetry, short stories, and essays has challenged conventional understandings of creativity and authorship.

This research paper examines the evolving role of Artificial Intelligence in English creative writing and critically analyses its impact on literary production. The study aims to explore how AI tools assist writers in idea generation, drafting, stylistic improvement, grammatical correction, and structural organization. Furthermore, it investigates the opportunities created by AI in enhancing accessibility, productivity, and experimentation in writing practices. At the same time, the paper addresses significant concerns regarding originality, intellectual ownership, ethical usage, dependency, and the potential dilution of authentic human voice.

Using a qualitative and descriptive research design based on secondary sources such as scholarly articles, academic journals, and critical essays, the study evaluates differing perspectives on whether AI should be considered a collaborative partner or a disruptive technological force in the creative process. The findings suggest that AI functions primarily as an assistive tool that complements rather than replaces human creativity. While AI systems can mimic linguistic

patterns and generate coherent content, they lack genuine emotional consciousness and lived experience, which remain central to authentic creative expression.

The study concludes that Artificial Intelligence is reshaping English creative writing by redefining creative boundaries and introducing new possibilities for human-machine collaboration. However, responsible implementation, ethical guidelines, and critical awareness are essential to ensure that technological advancement supports rather than undermines the essence of human creativity.

Introduction:

The rapid advancement of Artificial Intelligence (AI) has significantly influenced various academic and professional domains, including literature and creative arts. English creative writing, traditionally regarded as a form of artistic self-expression rooted in imagination, emotion, and cultural context, is now experiencing a technological transformation. AI-powered language systems are increasingly capable of generating essays, poems, short stories, and even complex narratives that closely resemble human writing. This development has prompted scholars, educators, and writers to reconsider the boundaries between human creativity and machine-generated content.

Creative writing has historically been associated with originality, personal voice, and lived experience. Writers draw upon emotions, memories, and social realities to construct meaningful texts. However, the emergence of AI tools capable of analysing vast amounts of linguistic data and replicating stylistic patterns challenges the traditional belief that creativity is exclusively human. AI systems can assist in brainstorming ideas, suggesting alternative expressions, correcting grammatical errors, and structuring narratives, thereby enhancing writing efficiency.

Despite these advancements, important questions arise regarding authenticity, authorship, and ethical responsibility. Can machine-generated content be considered truly creative? Does reliance on AI diminish individual intellectual effort? These concerns make it essential to critically examine the evolving relationship between AI and English creative writing. This study seeks to explore both the opportunities and the challenges presented by AI integration in creative literary practices.

Background:

The development of Artificial Intelligence in language processing has its roots in computational linguistics and Natural Language Processing (NLP). Over the past decade, improvements in

machine learning algorithms and data processing capabilities have enabled AI systems to understand, predict, and generate human-like text. These systems are trained on extensive datasets, allowing them to recognize patterns in grammar, vocabulary, tone, and narrative structure. As a result, AI tools are now widely accessible to students, researchers, and professional writers.

In educational settings, AI-based writing assistants are frequently used to support drafting and editing. In the publishing industry, AI is employed for content generation, copywriting, and even script development. Such applications demonstrate that AI is no longer limited to technical tasks but is actively participating in creative processes.

However, the integration of AI into creative writing has sparked academic debate. Some scholars argue that AI enhances creativity by serving as a collaborative partner that stimulates new ideas and experimentation. Others express concern that overdependence on AI may weaken critical thinking skills and reduce originality. Furthermore, issues related to plagiarism, copyright ownership, and ethical usage have become central topics of discussion.

Understanding this background is essential for evaluating the broader implications of AI in English creative writing. The growing presence of AI in literary production demands careful analysis of its benefits and limitations.

Theoretical Framework:

The theoretical foundation of this study is based on the concepts of creativity theory and human–machine interaction theory. Creativity has traditionally been defined as the ability to produce original and valuable ideas through imagination and cognitive processing. Psychological theories describe creativity as a complex interaction between intelligence, personality traits, environment, and motivation. In the context of English creative writing, creativity involves originality of thought, emotional depth, narrative coherence, and stylistic uniqueness.

Artificial Intelligence challenges traditional creativity theories by demonstrating the capacity to generate novel combinations of language. However, AI does not create through consciousness or emotional experience; instead, it operates through algorithmic pattern recognition and predictive modeling. From a computational creativity perspective, AI-generated content is based on data-driven probabilities rather than intentional imagination.

Human-machine collaboration theory further explains the relationship between writers and AI systems. Rather than replacing human authors, AI functions as an augmentative tool that enhances cognitive efficiency. The theory suggests that technology can extend human capabilities without eliminating human agency. In creative writing, this means that AI assists in structural organization, vocabulary enhancement, and idea expansion while the human writer remains responsible for meaning, emotion, and interpretative depth.

This theoretical perspective supports the argument that creativity in the age of AI is evolving into a collaborative process. The integration of AI does not eliminate human creativity but reshapes its methods and expression.

Literature Review:

The intersection of Artificial Intelligence and creativity has become a significant area of academic inquiry in recent years. Scholars have debated whether creativity, traditionally considered a uniquely human trait, can be replicated or simulated by machines. Margaret Boden (2004) categorizes creativity into combinational, exploratory, and transformational creativity, suggesting that computational systems are capable of simulating certain creative processes by recombining existing ideas in novel ways. This theoretical framework laid the foundation for understanding machine-assisted creativity.

Lev Manovich (2018) discusses how digital technologies reshape cultural production, arguing that software increasingly influences artistic and literary practices. According to this perspective, AI does not replace human creators but functions as a collaborative tool that enhances production and experimentation. Similarly, contemporary research in Natural Language Processing highlights that AI language models generate text by identifying patterns in large datasets, enabling them to produce grammatically accurate and contextually relevant content.

Recent academic discussions also focus on the role of AI in educational settings. Studies indicate that AI-powered writing tools help students improve grammar, vocabulary, and structural coherence. These tools are particularly beneficial for non-native English speakers, as they reduce linguistic barriers and encourage creative participation. However, researchers caution against

overdependence on AI, emphasizing that machine-generated text lacks genuine emotional depth and lived experience.

Ethical concerns form another significant dimension of the literature. Scholars raise questions regarding authorship, intellectual property, plagiarism, and authenticity. Since AI systems are trained on vast datasets, issues of originality and ownership become complex. Some critics argue that excessive reliance on AI may weaken individual creativity and critical thinking skills.

Overall, existing literature acknowledges both the transformative potential and the limitations of Artificial Intelligence in creative writing. While AI enhances efficiency and accessibility, it cannot replicate human emotion, consciousness, and subjective experience. The ongoing academic debate reflects a broader shift toward understanding creativity as a collaborative interaction between human intelligence and technological innovation.

Research Methodology:

This study adopts a descriptive and qualitative research design to examine the role of Artificial Intelligence in the evolution of English creative writing. The research is conceptual in nature and is based entirely on secondary data.

Data for the study has been collected from academic journals, research articles, books, conference papers, and credible online scholarly sources related to Artificial Intelligence, Natural Language Processing, and creative writing studies. The collected information is analysed using thematic analysis to identify key patterns, opportunities, and challenges associated with AI-assisted creative writing.

The study focuses on understanding how AI functions as a collaborative tool in English creative writing and examines its impact on creativity, originality, and authorship. This approach enables a critical and analytical understanding of the topic without primary data collection.

Opportunities of Artificial Intelligence in Creative Writing:

Artificial Intelligence offers several significant opportunities in the field of English creative writing. One of the major advantages is enhanced idea generation, where AI tools assist writers in brainstorming themes, plot structures, character development, and stylistic variations. AI also improves linguistic accuracy by providing grammar correction, vocabulary enhancement, and

sentence restructuring, thereby increasing the overall quality of writing. Additionally, AI promotes accessibility by supporting non-native English speakers and emerging writers, enabling them to participate more confidently in creative expression. Another important opportunity lies in experimental storytelling, where AI enables writers to explore new narrative formats, interactive fiction, and digital literature. Furthermore, AI saves time and increases productivity, allowing writers to focus more on creative refinement rather than technical corrections. Thus, AI acts as a supportive and innovative tool in modern creative writing practices.

Challenges and Ethical Implications:

Despite its benefits, the integration of Artificial Intelligence in creative writing presents several challenges. One major concern is originality and authorship, as AI-generated content raises questions regarding intellectual ownership and authenticity. There are also ethical issues related to plagiarism and overdependence on AI tools, which may reduce individual creative effort and critical thinking skills. Additionally, AI systems lack emotional depth, personal experience, and cultural sensitivity, which are essential elements of meaningful literary expression. Bias in AI-generated content is another concern, as language models are trained on large datasets that may contain inherent biases. These challenges highlight the importance of responsible and transparent use of AI in creative writing to preserve the integrity of literary production.

Future Scope of the Study:

The evolving relationship between Artificial Intelligence and English creative writing opens several avenues for future research. Further empirical studies can be conducted to analyse the long-term impact of AI on creativity, student learning outcomes, and literary quality. Future research may also explore the integration of AI tools in creative writing curricula and academic institutions. Additionally, studies can examine the influence of AI on publishing industries, authorship rights, and digital storytelling platforms. Comparative research between human-written and AI-assisted literary works can provide deeper insights into changing creative standards. As technology continues to advance, understanding the balance between human imagination and machine intelligence will remain a critical area for academic exploration.

Objectives of the Study:

- 1.To examine the role of Artificial Intelligence in transforming English creative writing practices.
- 2.To analyse the opportunities and challenges associated with the use of AI tools in creative writing.

3.To evaluate the impact of AI-assisted writing on creativity, originality, and authorship in English literature.

Findings and Discussion:

The analysis of secondary sources reveals that Artificial Intelligence significantly influences the practice of English creative writing in multiple dimensions. One of the most prominent findings is that AI enhances productivity and efficiency. Writers can generate ideas quickly, experiment with different narrative structures, and receive instant feedback on grammar and style. This support is particularly beneficial for students and emerging writers who may struggle with language fluency or structural organization. AI tools function as digital assistants, reducing time spent on technical corrections and allowing writers to focus more on conceptual development.

Another key finding is that AI promotes creative experimentation. By generating alternative storylines, metaphors, or stylistic variations, AI encourages writers to explore new perspectives. Some scholars argue that this interaction fosters a collaborative creative process in which human imagination guides the direction while AI provides structural or linguistic suggestions. This partnership model highlights AI as an enhancer rather than a replacer of creativity.

However, the discussion also reveals significant ethical and philosophical concerns. One major issue is originality. Since AI systems generate content based on patterns learned from existing texts, questions arise regarding intellectual ownership and authenticity. Critics argue that excessive reliance on AI may result in homogenized writing that lacks a distinct personal voice. Furthermore, the possibility of plagiarism—intentional or unintentional—poses academic and legal challenges.

Another important concern is the potential impact on critical thinking and creative independence. If writers depend heavily on AI for idea generation and drafting, they may gradually reduce their own cognitive engagement in the creative process. This dependency could weaken analytical skills and diminish the depth of emotional expression that characterizes authentic literature.

Despite these concerns, the findings suggest that AI cannot replicate genuine human experience, emotions, or cultural consciousness. While AI can simulate narrative coherence and stylistic patterns, it does not possess lived experience or subjective awareness. Therefore, human writers remain central to meaningful creative expression.

Overall, the discussion indicates that AI should be viewed as a powerful tool that requires responsible usage. Balanced integration, ethical guidelines, and critical awareness are essential to ensure that AI strengthens rather than compromises the integrity of English creative writing.

Implications of the Study:

The findings of this study have significant academic, practical, and ethical implications. Academically, the research contributes to ongoing discussions in digital humanities and literary studies regarding the nature of creativity and authorship. It encourages educators to rethink how creative writing is taught in classrooms where AI tools are increasingly accessible. Rather than prohibiting AI, institutions may need to develop structured guidelines that promote responsible usage.

Practically, the study highlights the importance of digital literacy among writers. Understanding how AI systems function enables writers to use them effectively without becoming overly dependent. AI can serve as a learning aid for language improvement and idea development, particularly for non-native English speakers. However, maintaining originality and critical thinking skills remains essential.

Ethically, the study underscores the necessity of clear policies regarding plagiarism, intellectual property, and authorship transparency. Writers must acknowledge the use of AI tools where appropriate to preserve academic integrity. Policymakers and educational institutions should establish regulations that balance innovation with ethical responsibility.

Overall, the implications suggest that Artificial Intelligence should be integrated thoughtfully into creative writing practices. Responsible collaboration between humans and machines can foster innovation while preserving the core values of authenticity and originality.

Conclusion:

Artificial Intelligence has significantly influenced the evolution of English creative writing by enhancing idea generation, language refinement, and overall writing efficiency. While AI tools support writers and improve productivity, they cannot replace human imagination, emotional depth, and originality. The study highlights that AI functions best as a collaborative assistant rather than a substitute for human creativity. Therefore, responsible and ethical use of AI can

enrich creative writing practices while preserving the authenticity and personal voice that define literary expression.

References:

- Boden, M. A. (1998). Creativity and artificial intelligence. *Artificial Intelligence*, 103(1–2), 347–356.
- Floridi, L., & Chiriatti, M. (2020). GPT-3: Its nature, scope, limits, and consequences. *Minds and Machines*, 30(4), 681–694.
- Manovich, L. (2019). *AI aesthetics*. Strelka Press.
- McCormack, J., Gifford, T., & Hutchings, P. (2019). Autonomy, authenticity, authorship and intention in computer generated art. *Digital Creativity*, 30(1), 1–18.
- Runco, M. A., & Jaeger, G. J. (2012). The standard definition of creativity. *Creativity Research Journal*, 24(1), 92–96.
- Selbst, A. D., Boyd, D., Friedler, S. A., Venkatasubramanian, S., & Vertesi, J. (2019). Fairness and abstraction in sociotechnical systems. *Proceedings of the Conference on Fairness, Accountability, and Transparency*, 59–68.
- Veale, T., & Cardoso, A. (Eds.). (2019). *Computational creativity: The philosophy and engineering of autonomously creative systems*. Springer.

संस्कृताध्ययनाय-अध्यापनाय च कृत्रिमबद्धे: उपयोगः

Sahana. N

3rd B. Com “A”

Sheshadripuram institution of commerce and management

Email id: sahana 7773@gmail

Phone number : 6362928030

Abstract

Sanskrit is one of the world’s oldest and most important languages, forming the foundation of Indian culture, philosophy, science, and spiritual knowledge. Traditionally, Sanskrit has been taught through the Guru–Shishya Parampara, which emphasizes memorization, discipline, and deep understanding. In recent years, Artificial Intelligence (AI) has emerged as a modern tool that supports language learning and teaching.

This paper presents an overview of Sanskrit, its importance, and the growing role of Artificial Intelligence in Sanskrit learning. It explains how AI tools help students and teachers through translation, grammar analysis, pronunciation support, and digital learning platforms. The paper also discusses the challenges and ethical issues of using AI in Sanskrit studies, such as over-dependence on technology, loss of traditional teaching values, and limitations in understanding cultural and spiritual depth. Finally, a comparison between traditional Sanskrit education and AI-based learning is presented, highlighting the strengths and limitations of both approaches. The study concludes that AI can support Sanskrit education effectively when used as a supplementary tool, but it cannot replace traditional teaching methods and human guidance.

Key Words: Artificial Intelligence in Sanskrit Education, Language Learning Technology, Educational Technology,

Introduction

Sanskrit is one of the oldest and richest languages of the world. It is the foundation of Indian knowledge systems like Vedas, Upanishads, Ayurveda, Yoga, and Philosophy.

Learning Sanskrit is often considered difficult due to complex grammar and pronunciation. Artificial Intelligence (AI) can make Sanskrit learning easy, interesting, and accessible.

Importance of Sanskrit

Sanskrit is the source of many Indian languages.

Large ancient knowledge is preserved in Sanskrit texts.

It improves logical thinking and memory.

Many scientific and philosophical concepts are available only in Sanskrit.

What is Artificial Intelligence (AI)?

- AI means which makes the machine to behave like a human
- AI is a technology that enables machines to think, learn, and make decisions like humans. Examples: Chatbots, voice assistants, language translation tools.

Role of Artificial Intelligence (AI) in Sanskrit Learning

- **AI-Based Sanskrit Grammar Learning**

Sanskrit grammar is systematic but complex. AI tools help students learn grammar in a simple and step-by-step manner.

AI-based learning platforms explain complex grammar rules such as vibhakti, lakāra, and sentence formation using easy language, AI can automatically split joined words and identify

Sanskrit Education

- **AI for Pronunciation and Chanting**

Correct pronunciation is very important in Sanskrit because even a small mistake can change the meaning. AI is very useful in preserving Vedic chanting traditions, where accuracy is essential. It supports oral learning (śravaṇa and manana) by providing repeated listening and correction.

How AI helps in Teaching Sanskrit?

- **Personalized Learning Based on Student Ability** AI helps students learn Sanskrit at their own speed.

Fast learners get advanced exercises, while slow learners get extra practice in grammar, shlokas, and vocabulary.

- **Helps Teachers Focus on Concept Explanation**

In traditional Sanskrit teaching, teachers spend a lot of time on routine tasks such as checking homework, correcting grammar exercises, conducting tests, and evaluating answer papers. Because of this, less time is available for explaining difficult Sanskrit concepts. Teachers can spend more time explaining Sanskrit concepts deeply and clearly.

- **AI helps in Sanskrit Translation**

Artificial Intelligence (AI) plays an important role in Sanskrit translation, making this classical language easier to understand for students, teachers, beginners, and researchers. AI-based tools can translate Sanskrit texts into: English, Kannada, Hindi, Telugu, Tamil, Marathi, and other Indian languages

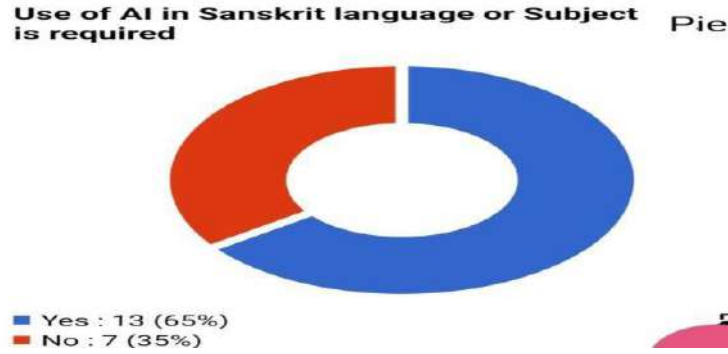
This helps learners understand the meaning of verses, shlokas, and prose texts without knowing advanced grammar.

- **Useful for Researchers & Scholars**

AI is very helpful for researchers and scholars who study Sanskrit texts. It makes their work easier, faster, and more accurate. One Sanskrit verse can have many meanings

AI helps by Showing different translations (English, Hindi, Kannada, etc.) Comparing meanings given by different scholars. Helping researchers choose the most suitable interpretation. Saves time in research work Normally, scholars spend hours searching books and dictionaries. With use of AI helps in :

references, and explanations are available quickly. Repeated manual work is reduced More time can be spent on thinking, analysis, and interpretation



Challenges & Ethical Issues of AI in Sanskrit

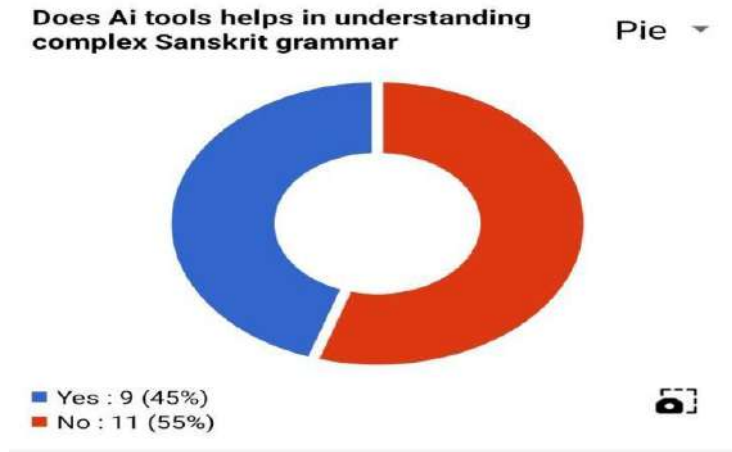
1. Dependence on AI (Over-Reliance)

Students may use AI for every answer instead of trying to understand Sanskrit on their own. They may skip learning grammar rules like Sandhi, Samāsa, Dhātu forms, trusting AI outputs blindly. Reduces memory power, as students do not practice memorizing shlokas, meanings, or rules.

Students may accept wrong AI answers without questioning or verifying with teachers or texts. Interpretation skills decrease, especially in understanding deeper meanings of shlokas.

Learners become dependent on technology, facing difficulty when AI tools are unavailable.

Traditional learning habits like reading, recitation, and self-practice slowly decline.



2. Loss of Teacher–Student Interaction

Traditional Sanskrit education follows the Guru–Shishya Parampara, where learning happens through close, continuous interaction between teacher and student. This system is not only about knowledge transfer but also about character building and deep understanding.

A teacher understands each student’s ability, mistakes, and learning pace. In Sanskrit, small errors in pronunciation, sandhi, or grammar can change the meaning completely

AI gives general answers, but it cannot observe a student personally or correct subtle mistakes the way a teacher can.

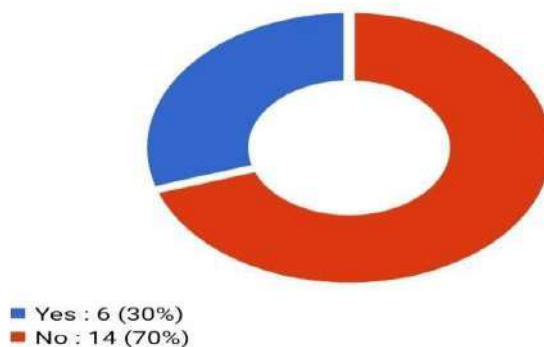
Sanskrit texts like the Vedas, Upanishads, and Bhagavad Gita teach ethics, discipline, humility, and life values. These values are traditionally taught through the teacher’s behavior, guidance, and discussions. AI can explain meanings, but it cannot instill values through lived example.

Sanskrit texts like the Vedas, Upanishads, and Bhagavad Gita teach ethics, discipline, humility, and life values. These values are traditionally taught through the teacher’s behavior, guidance, and discussions. AI can explain meanings, but it cannot instill values through lived example.

When interaction decreases, learning becomes surface-level. Sanskrit requires deep listening, repetition, chanting, and reflection under a teacher’s supervision. Without this, students may know Traditional study and teaching vs AI

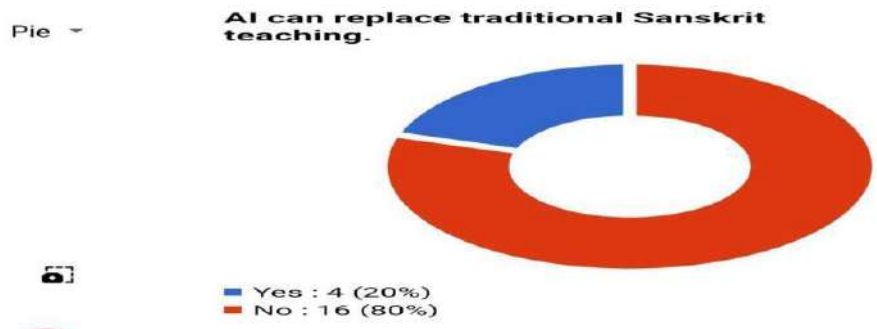
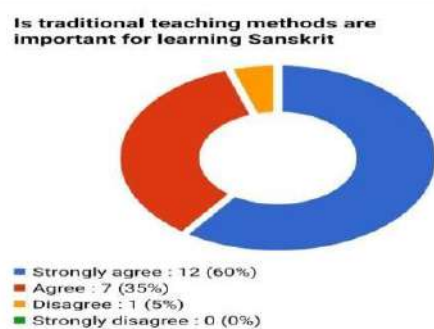
but lack true mastery, pronunciation accuracy, and spiritual understanding.

AI helps self-study of Sanskrit without a teacher



3.Lack of Cultural Understanding

AI works using data and patterns, but it does not truly understand Indian traditions, values, or lived cultural practices. Concepts like Dharma, Karma, Moksha, and Bhakti are not just definitions or ideas—they are lived philosophies developed through centuries of spiritual practice. AI often explains them only at a surface level. It can tell what Dharma or Karma means in words. But it cannot explain how these are felt, practiced, or realized in life



Traditional study and teaching vs AI

Traditional study and teaching

Learning happens through teacher–student interaction.

Students memorize grammar rules and practice repeatedly.

Emphasis on chanting, pronunciation, and discipline.

Learning is slow but deep and improves thinking ability.

Teachers guide students based on experience and tradition.

Limited learning outside the classroom.

AI-Based Study & Teaching

Learning happens through apps, tools, and online platforms.

AI gives instant meanings, translations, and grammar answers.

Learning becomes fast and easy, especially for beginners.

Students may depend too much on AI.

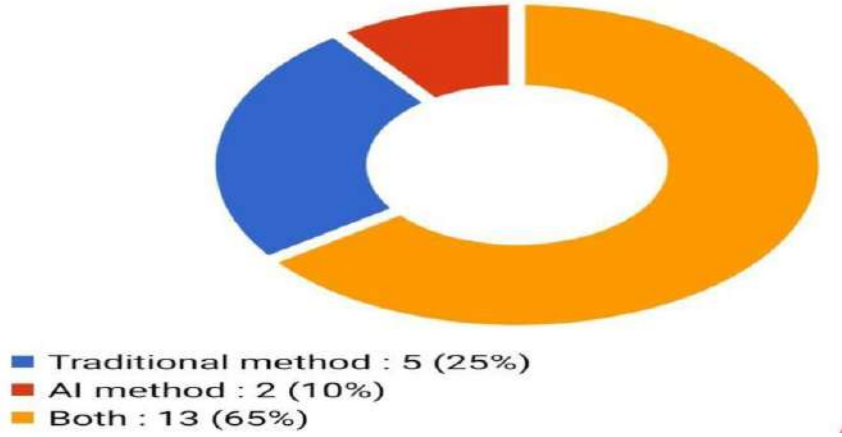
Less focus on memorization and deep understanding.

Learning is possible anytime and anywhere.

Conclusion

AI has emerged as a powerful supporting tool in the study and teaching of Sanskrit. AI applications such as automated translation, grammar analysis, digital text repositories, and pronunciation tools have made Sanskrit learning more accessible, faster. Traditional methods of learning, especially the Guru–Shishya Parampara, emphasize personal guidance which AI cannot fully replace. Therefore, AI should be used as a supplementary tool, not a substitute for traditional teaching. A blended learning approach, combining AI technology with classical pedagogy and teacher guidance, can ensure effective learning while preserving the authenticity and sanctity of Sanskrit.

Which methods helps you to understand Sanskrit better



Reference

Dr Srivas Krishna Das Bramachari

Journalist

Dr Narottam Mishra

Information Scientist

K S D S University, Darbhanga, Bihar

Gender Equality - " Gender - Equitable Mindsets among Youth " Cultivating Gender Equity Mindsets in the Next Generation

Author 1: Venkatesh M , BCA I Year [Regular], Department of BCA, Seshadripuram Institute of Commerce and Management,

Author 2: Prarthana S, BCA I Year [Regular], Department of BCA, Seshadripuram Institute of Commerce and Management,

Abstract

This paper explores approaches to building a gender-equitable mindset among youth, through a review of the literature, a proposed framework of intervention, and new ideas tailored to youth in educational settings. In contemporary society, gender inequities persist in attitudes, behaviours, institutional norms, and youth socialisation. A gender-equitable mindset refers to attitudes, beliefs and internalised values that support fairness of opportunity, respect for diversity of gender roles, and partnering rather than dominance. This research synthesises evidence of factors shaping gender attitudes in early adolescence, examines effective intervention strategies, identifies gaps in practice, and proposes a multi-layered model for programmes in educational institutions. Finally, the paper suggests novel ideas for conference presentation, including digital peer-mentoring platforms, gamified reflection modules and school-community hybrid action labs. A table summarises key literature. The paper aims to contribute to scholarship and practice on gender equity education among youth.

Keywords: youth, gender equity, mindset, adolescence, social-emotional learning, intervention, school.

Introduction

In many societies, gender inequities begin to take root during adolescence. Young people internalise social norms about what “boys should do” or “girls should do”, and this shape their future opportunities, relationships and self-images. Building a gender-equitable mindset among youth is crucial for social justice, sustainable development and the wellbeing of both genders. Schools and youth programmes offer a critical window of opportunity to foster such mindsets. This paper investigates (1) what the literature says about factors influencing gender attitudes in youth, (2) what effective interventions exist, (3) what gaps remain, and (4) presents new ideas for implementing gender-equity mindset development among youth, especially in educational contexts.

Literature Review

Factors shaping gender attitudes in youth

A systematic review of early adolescence (ages ~10-14) found that young adolescents across diverse cultural settings commonly express stereotypical or inequitable gender attitudes. Individual factors (sex, age, social class) and interpersonal factors (family, peers) play major roles. For example, parents and peer groups appear to be central in shaping gender socialisation.

Another study in an Indian rural context comparing tribal vs non-tribal adolescents found that perceptions regarding gender roles and access to education varied by region and socio-cultural background; for example, tribal area students had comparatively better perceptions regarding equitable roles of women in decision-making.

Research on adolescents’ gender-equitable attitudes has also shown that higher equitable attitudes are associated with lower perpetration of relationship abuse and higher sexual-health self-efficacy.

Interventions and what works

A study of a social-emotional learning (SEL) intervention with very young adolescents (10-11 years) found that mixed-gender experiential groups plus parental/community engagement showed larger improvements in gender-equity outcomes (odds ratio ~1.69) compared with

simpler interventions.

Another mixed-methods study of an adolescent school-based intervention in India found that the participatory group education approach improved gender-equity attitudes among students; girls improved more than boys.

In the physical-education domain, a systematic review found that inclusive teaching strategies, co-education, and motivational tasks for both sexes can foster positive attitudes towards gender equality in school sports programmes.

S.No.	Year	Title	Authors	Extract / Key Findings from the Paper
1	2020	Determinants of Adolescents Attitude Towards Gender Equality in Urban, Rural, and Tribal Areas of the Southern Part of India	Kadiyala, P., Smitha, M. C., & Narayana Murthy, M. R.	- Studied adolescents' gender attitudes across urban, rural, and tribal areas. - Socio-cultural context and parental education shaped perceptions. - Tribal youth showed more gender-equitable views. - Local culture strongly influenced beliefs.
2	2021	<i>Gender Role Stereotyping & Masculinity Notions among School-Going Adolescent in Western India – A</i>	Moitra, M., Vyas, S., Gupta, V., & Buch, R.	- Conducted in Western India among school-going adolescents. - Examined gender role stereotyping and masculinity perceptions.

		<i>Cross Sectional Study</i>		
--	--	------------------------------	--	--

				• Found persistent maledominant attitudes and low gender equity awareness. • Highlighted the need for school-based gender sensitisation programs.
		<i>Understanding factors that shape gender attitudes in early adolescence: a mixed-methods systematic review</i> (published in PLoS One)	Kågesten, A., Gibbs, S., Blum, R. W., Moreau, C., ChandraMouli, V., Herbert, A., &	• A global review found genderstereotypical attitudes common among early adolescents worldwide. Family, peers, and media were key influences shaping gendered beliefs. • A comparative study in rural India showed tribal vs. nontribal differences in gender equity perceptions. • Community participation and education enhanced equitable thinking.

3	2016		Amin, A.	School-based gender sensitisation programs effectively shifted attitudes toward greater equity.
---	------	--	----------	---

4	2022	<i>Gender Equity Perceptions Among School-Going Adolescents: A Mixed-Methods Comparison Amongst Tribal and</i>	Lahiri, A., & Jha, S.	Explored gender equity perceptions among schoolgoing adolescents in rural India. Used a mixed-methods approach comparing tribal and non-tribal groups.
---	------	--	-----------------------	--

		<i>Non-Tribal Rural Areas of an Eastern State in India</i>		- Found that tribal adolescents often held more equitable gender attitudes. - Education level and community engagement positively influenced gender-equitable thinking. - Highlighted the effectiveness of school-based gender sensitisation programs in shifting attitudes.
		<i>Promoting gender equity as a strategy to reduce HIV risk and gender-based</i>		The study looked at how encouraging gender fairness could help young men in India

5	2008	<i>violence among young men in India</i> (Horizons Final Report)	Rottach, E., Pulerwitz, J., & Barker, G.	• reduce HIV risk. • Young men participated in interactive, reflection-based sessions. • These sessions helped them adopt more respectful, equitable attitudes toward women.
---	------	---	---	--

				• They also became less likely to justify violence, showing real changes in thinking and behavior.
6	2021	<i>Promoting gender equity in very young adolescents: targeting a window</i>	Doyle, A. M., Levtov, R. G., Barker, G., Bastian, G. G.,	• Explored a social-emotional learning (SEL) program for very young adolescents (10–11 years) in Tanzania.
		<i>of opportunity for social emotional learning and identity development</i>	& ContrerasUrbina, M.	• The program aimed to build empathy, respect, and nonviolent conflict resolution. Helped participants develop more gender-equitable attitudes and improve peer relationships.

Gaps and challenges

While the evidence base is growing, several gaps remain: many studies are from high-income countries, limiting applicability in low- and middle-income contexts. Further, many interventions lack longitudinal follow-up to assess sustainability of mindset change. Also, specific digital-age interventions (online or peer-led) remain under-explored. There is a need to move beyond individual attitude change to targeting relationships (peers, family), institutional culture, and community norms.

Conceptual Framework

We propose a three-layer model of building a gender-equitable mindset among youth:

1. **Internal layer (Individual mindset)**
 - o Growth mindset about skills, including challenging gender-fixed beliefs (for example: “only boys are good at X”, “girls should avoid Y”).
 - o Self-reflection on gender-role internalisation, bias awareness, empathy

development.

2. **Relational layer (Peers, family, school environment)**
 - o Peer-group dialogue, mixed-gender collaborative tasks, mentoring.
 - o Family and teacher engagement in modelling equitable behaviours and norms.
 - o School climate audits and inclusive policies.
3. **Institutional/community layer**
 - o School programmes and curricula that include gender-equity modules.
 - o Community-based activities (campaigns, clubs) to shift norms.
 - o Digital platforms and peer networks for youth to explore gender, identity, equity.

Our framework emphasises **mindset shift**, **skill building**, and **behavioural practice** rather than simply knowledge transfer.

Implementation Considerations

1. Digital Peer-Mentoring Platform “EquiMind”

- An online portal/app where youth can join mixed-gender peer-mentoring groups guided by trained youth-facilitators.
- Modules include interactive scenario-games (e.g., decision-making when confronted with gender role stereotypes), video reflections, peer-chats.
- Youth earn “equity badges” for activities, reflections, mentoring others.
- Schools partner to integrate as co-curricular activity.

2. Gamified Reflection Modules in Curriculum

- Within subjects (e.g., English, Social Science, Computer Applications) embed short ‘Gender Equity Missions’ (e.g., redesign a role-play to challenge stereotypes, code a game character breaking gender norms).
- Use “escape room” style classroom sessions where teams (mixed-gender) solve puzzles about gender bias, access and opportunity.

- Follow-up via student-led “Equity Action Projects” where they propose changes in school policy or community.

3. School-Community Hybrid Action Labs

- Youth teams collaborate with local community centres, NGOs, or neighbourhood groups to carry out small action projects. For example, they might map gender roles in households, organize community theatre or flash mobs to challenge stereotypes, or host family dialogue evenings.
 - Students use photovoice: taking photos of everyday gendered tasks, reflecting on them, and sharing their insights with peers and parents.
 - The impact of these activities is tracked with simple before-and-after surveys, measuring shifts in attitudes and behaviours.
4. **Mixed-gender participation:** interventions that involve both boys and girls, and encourage mixed-gender dialogue are more effective.
 5. **Relational/contextual focus:** Because peer and family influences are central, programmes must engage these layers, not just individual youth.
 6. **Sustainability and institutionalisation:** Rather than one-off workshops, embed gender-equity mindset development into curricula, school culture and policy.
 7. **Measurement and evaluation:** Use validated scales (e.g., gender-equitable attitudes scale) and link attitude change to behaviour/health outcomes.

Conclusion

Building a gender-equitable mindset among youth is an urgent and strategic priority for educational institutions, youth programmes and society at large. By understanding the factors that shape attitudes, employing evidence-based interventions, and innovating new practices—such as digital peer-mentoring, gamified reflection modules and action labs—schools and communities can foster more equitable mindsets in the next generation. Embedding these efforts into curricula, engaging teachers and parents as partners, and focusing not just on knowledge but mindset and behaviour change will increase the chances of lasting transformation.

References

1. Kadiyala, P., Smitha, M. C., & Narayana Murthy, M. R. (2020). Determinants of adolescents' attitude towards gender equality in urban, rural, and tribal areas of the southern part of India. *Online Journal of Health and Allied Sciences*, 19(2), 4.
2. Moitra, M., Vyas, S., Gupta, V., & Buch, R. (2021). Gender role stereotyping & masculinity notions among school-going adolescents in Western India – A cross sectional study. *National Journal of Community Medicine*.
3. Kågesten, A., Gibbs, S., Blum, R. W., Moreau, C., Chandra-Mouli, V., Herbert, A., & Amin, A. (2016). *Understanding factors that shape gender attitudes in early adolescence globally: A mixed-methods systematic review*. **PLoS ONE**, 11(6), e0157805.
4. Lahiri, A., & Jha, S. (2022). *Gender equity perceptions among school-going adolescents: A mixed-methods comparison among tribal and non-tribal rural areas of an eastern state in India*. **Journal of Family Medicine and Primary Care**, 11(2), 701–707.
- Rottach, E., Pulerwitz, J., & Barker, G. (2008). *Promoting gender equity as a strategy to reduce HIV risk and gender-based violence among young men in India*. **Horizons Final Report**, Population Council.
5. Doyle, A. M., Levto, R. G., Barker, G., Bastian, G. G., & Contreras-Urbina, M. (2021). *The effects of a social-emotional learning program on gender equity attitudes among very young adolescents in Tanzania*. **Journal of Adolescent Health**, 68(6), 1089–1096.
6. Contreras-García, Y., Lera-López, F., & Sánchez-López, J. M. (2023). *Gender equality in physical education: A systematic review of inclusive strategies in secondary schools*. **Societies**, 13(3), 64.

Unveiling of Bharateeya Education system and development

Sahana. N

2nd B. Com "A"

Sheshadripuram institution of commerce and management

Email id: sahana 7773@gmail

Phone number : 6362928030

Key word: Bharateeya Education System, Ancient Indian Education, Gurukul System, Vedic Learning, Education Modern Reforms, NEP 2020

Abstract

The Bharateeya education system has a rich heritage rooted in ancient traditions like the Gurukul system, Vedic learning, and holistic development. This paper explores the historical evolution, key developments, and future prospects of the Bharateeya education system. It highlights the balance between traditional wisdom and modern innovations.

Introduction

The Bharateeya education system is one of the oldest and most profound learning traditions in the world, deeply rooted in spiritual, philosophical, and scientific knowledge.

From the Gurukul system of ancient India to renowned centers of learning like Nalanda and Takshashila, education in India has always emphasized holistic development, moral values, and lifelong learning.

Over time, the system underwent significant changes due to colonial influences and modernization, leading to a shift from value-based education to a more exam-driven approach. However, with the introduction of National Education Policy (NEP) 2020, there is a renewed focus on reviving traditional knowledge systems, integrating skill-based learning, and promoting a multidisciplinary approach.

This paper explores the historical evolution, key transformations, and future prospects of the Bharateeya education system. It aims to highlight the importance of blending ancient wisdom with modern innovations to create a well-rounded, inclusive, and future-ready education system.

- **How the Bharateeya education system was before? And what are the changes and developments are done in the education system**

1.Vedic Period (1500 BCE – 600 BCE)

Education was based on the Gurukula system, where students (*shishyas*) lived with their teachers (gurus) and learned various subjects.

The main texts studied were the Vedas, Upanishads, and Vedangas, along with subjects like astronomy, mathematics, medicine, philosophy, and grammar.

Sanskrit was the primary language of instruction.

Teaching methods included oral recitation, memorization, discussions, and debates.

2. Buddhist Period (600 BCE – 1200 CE)

Buddhist monasteries and universities like Nalanda, Takshashila, Vikramashila, and Vallabhi emerged as centers of learning. Education became more structured, with formal admission systems, libraries, and hostels.

Subjects expanded to include logic, medicine, arts, law, and statecraft.

Pali and Prakrit became common languages of instruction.

3. Jain education system

Jain education was primarily imparted in monasteries (Upashrayas) and Mathas, where monks (Acharyas) trained students (Shishyas). Emphasis on scriptural study, debate, and critical thinking. Education was not just about knowledge but also about spiritual upliftment and ethical conduct. Students followed strict vegetarianism, truthfulness, and non-possessiveness. Jain scholars established some of India's oldest and richest manuscript libraries. Many Jain texts were written in Prakrit, Ardhamagadhi, and Sanskrit.

Role of Jain Women in Education

Jainism promoted education for women, allowing them to become scholars, poets, and philosophers.

4. Takshashila University (6th Century BCE – 5th Century CE): Considered the world's first university (6th century BCE). Had over 10,000 students from India, China, Greece, Arabia, and Persia.

Subjects taught: Vedas, medicine, mathematics, astronomy, logic, philosophy, military science, statecraft, and arts.

Famous Scholars who studied in Takshashila university : Chanakya (author of Arthashastra), Panini (Sanskrit grammar).

This university was destroyed by the Huns in the 5th century CE.

5. Nalanda University (5th Century CE – 12th Century CE)

One of the greatest learning centers in the world, founded in the Gupta period (5th century CE). Had over 10,000 students and 2,000 teachers.

Subjects taught : Buddhism, Vedas, logic, medicine, astronomy, mathematics, and arts. Students were more than 10,000 students and 2,000 teachers. A Vast library called "Dharma Gunj" (Mountain of Knowledge). Destroyed by Bakhtiyar Khilji in 1193 CE, who burned its library, reportedly for months.

6.Impact of Islamic and colonial rule on traditional education

Islamic rulers founded madrasas (Islamic schools) that provided How The Indian Education system changed after the arrival of British to India religious and secular education. Subjects included theology, law, philosophy, mathematics, astronomy, and medicine. Arabic became the primary language of education, influencing local languages and scripts. Islamic education emphasized Quranic studies, Hadith (sayings of Prophet Muhammad), and Fiqh (Islamic law). Education was often free or subsidized for students.

- **Impact of Colonial Rule on Traditional Education**

Colonial authorities replaced traditional schools with Western-style institutions.

Islamic rule contributed to the growth of knowledge and institutional learning, preserving and expanding education. In contrast, colonial rule disrupted traditional education systems, imposed Western curricula, and limited access, fundamentally altering education in colonized societies.

How The Indian Education system changed after the arrival of British to India?

- Traditional learning centers were gradually replaced by British-style schools. Gurukula's and pathshalas lost patronage as the British did not support or fund them. Lord Macaulay played a crucial role in introducing English as the medium of education.

The British established institutions like the University of Calcutta (1857), University of Bombay (1857), and University of Madras (1857). Western subjects like science, European history, and law replaced traditional Indian knowledge.

- **Why British did not support for the Gurukula's and pathshala education system?**

The British did not support the Gurukul and Pathshala education system because it did not align with their colonial goals. The Gurukul system focused on holistic learning and self-sufficiency, which did not suit British interests. The British believed English education would make Indians more "civilized" in their view. Traditional Indian education encouraged self-reliance, while the British wanted Indians to depend on their system.

- They wanted to train Indians for government jobs, not make them independent thinkers..Indian subjects like Ayurveda, Yoga, Astronomy, and Vedic Sciences were ignored in favor of Western science and medicine.Sanskrit and regional languages were discouraged.
- Later, Indian reformers like Raja Ram Mohan Roy, Swami Vivekananda, and Mahatma Gandhi worked to revive Indian education and culture. After independence, India started bringing back its traditional knowledge along with modern learning.

- **What were the education importance given for girls in pre independence?**

During the pre-independence period, girls' education was largely neglected due to societal restrictions and deep-rooted traditions. Girls were often denied education as society believed their role was limited to household duties. Many families considered educating girls unnecessary and instead focused on early marriage. Mahatma Gandhi and Rabindranath .

Growth In Schools & Colleges

More girls' schools and women's universities were established, increasing literacy rates.

Women's participation in higher education increased, leading to careers in medicine, engineering, politics, and science. Tagore also supported women's education through their movements.

Social reformers like Raja Ram Mohan Roy, Jyotirao Phule, and Savitribai Phule promoted girls' education.

British Influence: Some missionary and government schools started educating girls, but progress was slow.

- **What were the education importance given for the girl Post-Independence Era (After 1947)**

After independence, the Indian government took significant steps Comparison: Pre-Independence vs. Post-Independence to promote and improve girls' education.

1. Constitutional Provisions:

The Right to Education (RTE) Act, 2009 made education free and compulsory for all children (6–14 years).

Article 15 and 45 of the Constitution ensured equal education rights for boys and girls.

2. More girls' schools and women's universities were established, increasing literacy rates.

Women's participation in higher education increased, leading to careers in medicine, engineering, politics, and science.

3. Women Empowerment through Education

Education helped women become independent, fight against social evils, and participate in decision-making.

Educated women contributed to the workforce, economy, and leadership roles in various fields.

- **Comparison: Pre-Independence vs. Post-Independence**

1. Access to Education

Pre-Independence

Limited, mainly for upper-class girls

Post independence

Widespread and compulsory for all

2. Social Barriers

Pre independence

Child marriage, stigma, caste restrictions

Post independence

Social barriers :Reduced due to legal protections

3. Government Role

pre independence

Minimal efforts by British rulers.

Post independence

Government Role: Strong government policies promoting education

4. Women Empowerment

Pre independence

Limited to a few educated women reformers.

Post independence

Women's Empowerment: Women excelling in all fields, from politics to business

- **What were the education institutions built for the women's in pre independence and post independence?**

Pre-Independence (Before 1947)

1. Bethune College, Kolkata (1879) – First women's college in India.
2. Lady Harding Medical College, Delhi (1916) – First medical college for women
3. Madras Women's Christian College, Chennai (1915) – Higher education for women.
4. Aligarh Muslim University – Women's Section (1911) – Education for Muslim women.

Post independence (After 1947)

1. Lady Shri Ram College for Women, Delhi (1956) – Premier college for arts, commerce, and science.
2. Avinashilingam University for Women, Tamil Nadu (1957) – Focus on home science and higher education.
3. Jawaharlal Nehru University (JNU) – Women's Studies Program (1969) – Research in gender studies.
4. Maharani's College, Jaipur (1944, expanded post-independence) – Women's education in Rajasthan.
5. National Institute of Fashion Technology (NIFT) (1986) – Encourages women in fashion and design.
6. IITs & IIMs – Increased Women's Enrollment – Policies to promote STEM and business education for women.

Is Gurukula education system still existing in India even in the current year? Where is the Gurukula system still followed?

- Vedic and Traditional Gurukula's

1. Kanchi Kamakoti Peetham Veda Patashala (Tamil Nadu)
2. Swaminarayan Gurukula (Multiple Locations – Gujarat, Karnataka, Telangana, etc.)
3. Sri Veda Bharati Gurukulam (Rishikesh, Uttarakhand)
4. Govardhan Gurukul (Mathura, Uttar Pradesh)

5. Chinmaya International Foundation (Kerala)

- Modern Gurukula's(Blending Traditional and Contemporary Education)

1. Sri Sri Ravi Shankar Vidya Mandir Gurukula (Bangalore & other locations)
2. Gurukula Kangri University (Haridwar, Uttarakhand)
3. Rishi Valley School (Andhra Pradesh) – Inspired by Jiddu Krishnamurti
4. Dayananda Anglo-Vedic (DAV) Gurukula's (Haryana, Punjab, and more)
5. Bharatiya Vidya Bhavan's Schools (Across India)
6. Shantiniketan (Visva-Bharati University, West Bengal)

About Shantiniketan

Shantiniketan, located in West Bengal, India, was founded by Rabindranath Tagore in 1901 as an experimental school based on the Gurukula system. **It later grew into Visva-Bharati University in 1921.** This system integrates Indian traditions with modern global education, focusing on creativity, culture, and self-development.

- Unlike traditional classrooms, students study in natural surroundings under trees, emphasizing freedom and creativity. Encourages learning through observation, experience, and interaction rather than rote memorization. The Gurukul system of close teacher-student interaction is maintained.

Teachers act as mentors, guiding students beyond academics, focusing on moral and personal growth.

- Subjects include: Humanities & Social Sciences (History, Philosophy, Literature),
- Fine Arts & Music (Kala Bhavana – Art School, Sangeet Bhavana – Music School Science & Rural Development (Siksha-Satra for rural education),
- Languages (Bengali, Sanskrit, English, and others)
- Encourages students to engage in folk traditions, arts, and performances.

Why both traditional and modern education is important?

- Traditional education focuses on discipline and foundational knowledge, while modern education incorporates technology and creativity, giving a balanced approach. Modern education emphasizes practical skills and innovation, whereas traditional education ensures mastery of fundamental subjects.
- Modern education offers online learning and global exposure, while traditional education fosters face-to-face interaction and social skills.

Where does India stand while in education in current situation?

India stands at 33rd rank according to the 2020 survey. Although it is sad to see India not even in the top 10 list, there is a progressive growth in education in India. **In 2018, it stood at 40th rank and in 2019 it stood at 35th.**

- **Post independence educational reforms & Developments of Bhartheeya education system**
- The National Education Policy (NEP) 2020 promotes Indian Knowledge Systems (IKS), including Ayurveda, Yoga, Sanskrit, and Vedic studies.
- Institutions like IITs, IISc, and Nalanda University are incorporating ancient wisdom with modern science.
- Establishment of IITs, IIMs & AIIMs for higher educational excellence
- India now has 1,265 universities and 50,000+ colleges, making it one of the world's largest education systems.
- Online learning platforms (SWAYAM, DIKSHA, Byju's, Unacademy) are making education more accessible.
- SEP scheme
Helps students develop creative ideas into real-world solutions.
Provides opportunities for students to showcase and scale their innovations.
Teaches entrepreneurship, financial literacy, and market strategies.
- **Importance of learning education.**
- Education provides essential knowledge about the world, helping individuals make informed decisions and understand their surroundings.
- Good education opens up better job opportunities, increases earning potential, and contributes to economic progress. Education enhances critical thinking, creativity, and problem-solving skills, shaping an individual's personality and confidence.
- A Well-educated population leads to a stronger economy, better governance, and overall national progress.
- Promotes gender equality, reduces poverty, and empowers marginalized communities, leading to a more just and developed society.
- Learning improves language, teamwork, and leadership skills, making social and professional interactions more
- Education drives innovation in science, medicine, and technology, improving overall quality of life.
- Educated individuals are more aware of health, hygiene, and nutrition, leading to healthier lifestyles.

Conclusion

The Bharateeya education system, rooted in the Gurukul tradition, emphasized holistic learning, ethics, and self-reliance, which are now being revived through modern reforms. A focus on regional languages, practical skills, and moral education ensures accessibility, employability, and ethical development for all learners.



'ERUDITE'

2025-26

*Ideas | Insights | Innovations
for a Better Tomorrow*

*“Research expands knowledge,
collaboration builds communities,
and ideas shape a brighter tomorrow.”*



SESHADRIPURAM EDUCATIONAL TRUST
SESHADRIPURAM INSTITUTE OF COMMERCE AND MANAGEMENT

(Permanently Affiliated to Dr Manmohan Singh Bengaluru City University)
NAAC Accredited 'A' Grade.

39 & 40, Girls' School Street, Seshadripuram, Bengaluru - 560020

Ph : 080-22955382 | Web : www.sicm.edu.in

Follow us on :

 : [www.youtube.com/seshadripuram institute of commerce and management](https://www.youtube.com/seshadripuram%20institute%20of%20commerce%20and%20management)

 : [sicmclg_official](https://www.instagram.com/sicmclg_official)

INSPIRE
LEARN
LEAD