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Potential Impact of Adopting Artificial Intelligence (AI) in Management Studies With Special Reference to Patna

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Abstract: This research paper explores the various potentials, implications, challenges, and opportunities of adopting Artificial Intelligence (AI) in Management Studies, primarily addressing management students and educators in Patna. Thepaper systematically assesses the awareness and usage frequency of AI tools among students. The research highlights the necessity for adopting Artificial Intelligence in the regular academic curriculum and the necessary technological upgrades essential for Management Schools to adopt AI-driven methodologieseffectively. Furthermore, it explores whether AI can transform traditional teaching methods, and its effects on students' academic performance, learning satisfaction and engagement levels. Finally, this paper provides broad perspectives on the future of Management Studies in an era dominated by AI. Itoffers suggestions for students, teachers and policymakers to make the most of AI's capabilities while transforming management education in Patna.

Keywords: *Artificial Intelligence, Management Studies, AI Integration, Personalised Learning*

INTRODUCTION

Artificial Intelligence is the incorporation of human intelligence in machines that are programmed to think, learn, and perform complex tasks that are usually performed by humans. It encompasses various technologies like machine learning, natural language processing, robotics, and algorithms creating and enabling systems that can recognise patterns and process data efficiently. AI aims to replicate human cognitive abilities, and problem-solving skills enabling it to perform human function with more efficiency.

In the modern era, the influence of Artificial Intelligence (AI) progress has been truly remarkable. It's not just a ripple; it's a profound wave of change that has touched everysector, moulding vital aspects like decision-making, automating tasks, and providing valuable insights. Interestingly, the Indian AI market is anticipated to reach US$ 7.8 billion by 2025.[1]

Patna, the capital of Bihar, emerges as a unique centre for exploring the adoption of AIin the realm of management studies. The blend of a vibrant technological setting and the unique socio-economic fabric of the region provides an excellent backdrop for thisexploration. Globally, the landscape of management education is evolving swiftly, demanding inventive approaches to harmonise with the ever-shifting professionalterrain, leading to a reconsideration of traditional teaching methods.

This study goes beyond just adding technology; it's a crucial strategy to prepare the nextgeneration of management professionals with skills that match the changing needs. Theimportance of this research is in its strong dedication to making young people aware and ready, imagining a modernised way of learning about management in Patna. By fixing learning gaps, suggesting new ideas, and giving insights into the power of AI, this research aims to significantly improve management education in Patna, making it more dynamic, effective, and ready for future challenges and opportunities.

[1] IBEF. (2023, May). Future of Data Science and AI in India. Retrieved from https://www.ibef.org/research/case-study/future-of-data-science-and-AI-in-india

OBJECTIVES

1. To investigate the potential impacts of adopting artificial intelligence in the field ofmanagement studies.
2. To know different aspects of management studies where integration of AI canenhance the teaching and learning

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experience.

3. To explore the challenges in introducing AI in the field of education and creatingawareness about AI among the youth of Patna.

4. To know how AI can help fill the learning gap of students in management studiesand provide a more practical teaching and learning approach.

5. To find the potential of AI in replacing the orthodox methods of teaching andlearning and evolve a modernized way of management studies.

HYPOTHESES

Hypothesis 1: The integration of Artificial Intelligence in management studies will leadto a significant improvement in students' academic performance and learning outcomes.

Hypothesis 2: AI-based technologies will result in increased student engagement andsatisfaction levels.

Hypothesis 3: AI will make management studies more dynamic and practical.

Hypothesis 4: Implementation of Artificial intelligence will require massive spendingand technological upgrades in the educational institutions of Patna.

Hypothesis 5: AI will help eradicate the orthodox methods of teaching.

RESEARCH METHODOLOGY

RESEARCH DESIGN

This study primarily utilises an exploratory research design that aims to delve into the various facets and potential implications of implementing Artificial Intelligence (AI) within the sphere of management studies specifically in the context of Patna.

Exploratory research design is selected due to its flexibility which allows us to explorethe potential of adopting AI technology in management education from many differentangles while taking into account potential transformations that may be underway or areabout to emerge.

A comprehensive analysis of different aspects of AI adoption such as feasibility, practicality and effectiveness in the particular education system of Patna can be made through this approach.

An exploratory research design will offer a basic awareness which could lead to new studies or initiatives on AI in management education. By following this research methodology, one can undertake a thorough consideration of several issues such as; educational institutions' preparedness, stakeholder perceptions and experiences and possible risks and opportunities that come along with AI implementation.

DATA SOURCES

This research involves primary and secondary data for understanding the effects of implementing Artificial Intelligence on management studies at Patna. This study aims at developing and using appropriate data collection techniques that integrate primary and secondary data sourcing with a view to obtaining holistic results pertaining to the implication, challenge, and opportunity of adopting artificial intelligence in management studies in Patna. These different kinds of data are set to enable holistic analyses and informed views on the adaptation of AI in this field of study.

Primary Data

The process involved engaging directly with key stakeholders in management studies, such as students and educators. This interaction was facilitated by a well-crafted questionnaire along with survey and interview of management students and faculties ofPatna to capture diverse viewpoints and firsthand experiences directly from the target sample regarding AI in management education.

Secondary Data

In addition to primary data, various secondary sources were gathered, including academic journals, books, previously

reviewed papers, credible articles, and relevant websites. These sources offered invaluable insights and existing knowledge on AI integration in education, specifically within management studies. This secondary data aided in establishing a foundational understanding and contextual framework for the research.

Sampling Design

The sampling design used for this study is a combination of purposive and conveniencesamples to ensure a comprehensive and diverse representation of participants within thefield of management studies in Patna.

Purposive sampling refers to selecting participants deliberately in terms of their relevance for the study. This study is based on a purposive selection of participants allowing us to capture different perspectives and experiences in management educationfor this study. With convenience sampling, participants are selected based on their convenience and willingness to participate. This method would also be convenient dueto the limited geography which would allow for data collection from students as well as educators who are easily available around Patna.

This research will utilize both purposive and convenient sampling strategies to ensure proper representation within the management studies' contexts in Patna while at the same time maintaining the practical aspects involved in selecting and engaging participants for the study.

Details regarding the sampling design for the research project are as follows-

Target Population	Students and Educators in the field of management studiesspecifically focusing on Patna,
Sampling method	Non-probability Sampling
Sampling Technique	Purposive and Convenience sampling
Sample Size	300 Management Students and Educators of Patna
Research Instrument	Questionnaire, Survey and Interview

LITERATURE REVIEW

According to Bhutoria (2022) and Huang et al. (2021), AI's impact on education is profound, revolutionizing personalized learning through adaptive systems and immersive environments, benefiting learning outcomes by addressing individual student needs. In financial management studies (Zakaria et al., 2023), AI transforms asset management and decision-making processes, offering insights and enhancing engagement across demographics.

However, challenges persist. Fairness issues, teacher adaptation, and technological readiness hinder AI integration. Teacher preparedness and infrastructure pose significant obstacles, requiring a balance between AI-driven methods and traditional teaching approaches (Zhai et al., 2021).

Future prospects (Huang et al., 2021) highlight AI's role in tailoring pedagogical strategies, offering personalized learning pathways, and shaping educational methodologies. While AI personalizes learning and reduces teacher workload, successful education demands a blend of AI and traditional teaching (Bhutoria, 2022).

In summary, AI reshapes education through personalized learning but encounters challenges of fairness, teacher readiness, and technological implementation, emphasizing the need for a balanced approach combining AI and traditional teaching methods for effective learning.

RESEARCH GAP

1. There's a need for more thorough research to be conducted in the management institutions of Patna, Bihar providing a deeper understanding of specific applications, challenges, and benefits of AI inclusion in the field of management.
2. Minimal research work has been done so far on the adaptability of teachers andstudents of management institutes of Bihar, towards the integration of AI tools in management studies. This paper explores the readiness and adaptability of educators and students to effectively integrate AI tools within the frameworks ofmanagement education in, Bihar
3. The development of Hybrid learning models that can blend traditional teaching methods with AI-driven approaches facilitating personalised learning and catering diverse needs of management students is the area that is yet to be explored in the regions of Patna.

ANALYSIS AND INTERPRETATION

Age Group of the Respondents

Options	*Responses*	*Percentage*
18-24	247	82%
25-30	25	8%
31-35	5	2%
36-40	17	6%
40+	6	2%
Total	300	100%

Table 1: Age Group of the Respondents

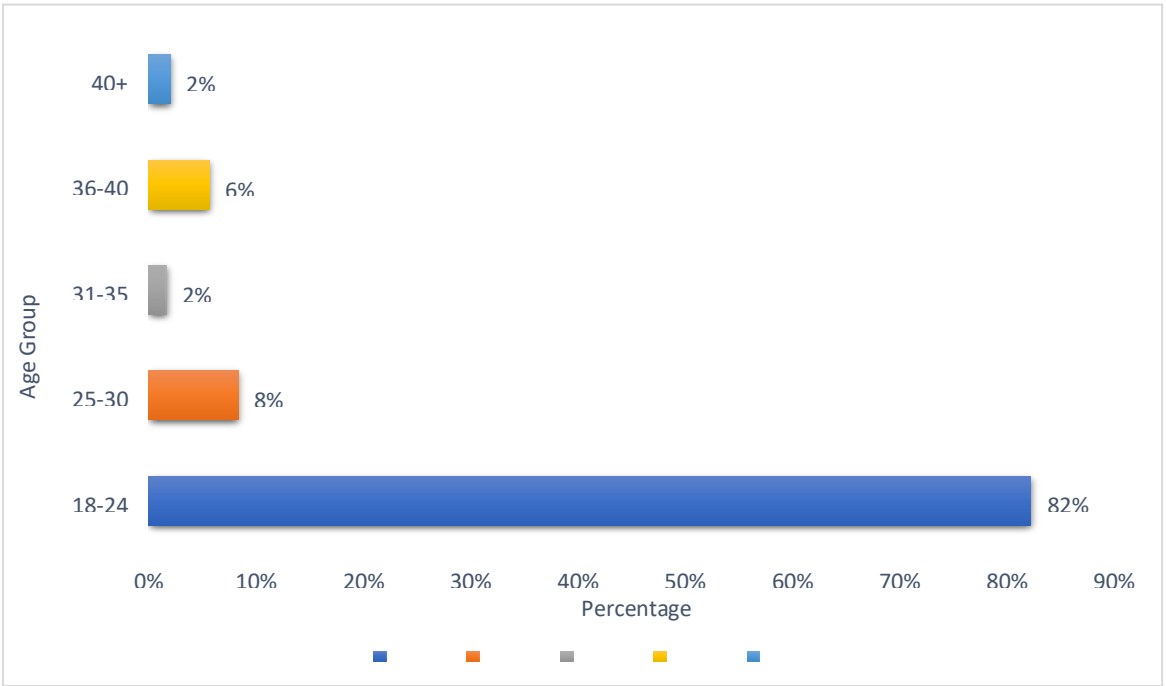

Figure 1: Age Group of the Respondents

Interpretation- The survey got responses from various age groups. Most respondents (82%) are in the range of 18-24 years old. A smaller portion (8%) is within 25-30, while others are spread across 31-35 (2%), 36-40 (6%), and 40+ (2%)

age brackets.

Gender of the Respondents

Options	*Responses*	*Percentage*
Male	116	39%
Female	184	61%
Total	300	100%

Table 2: Gender of the Respondents

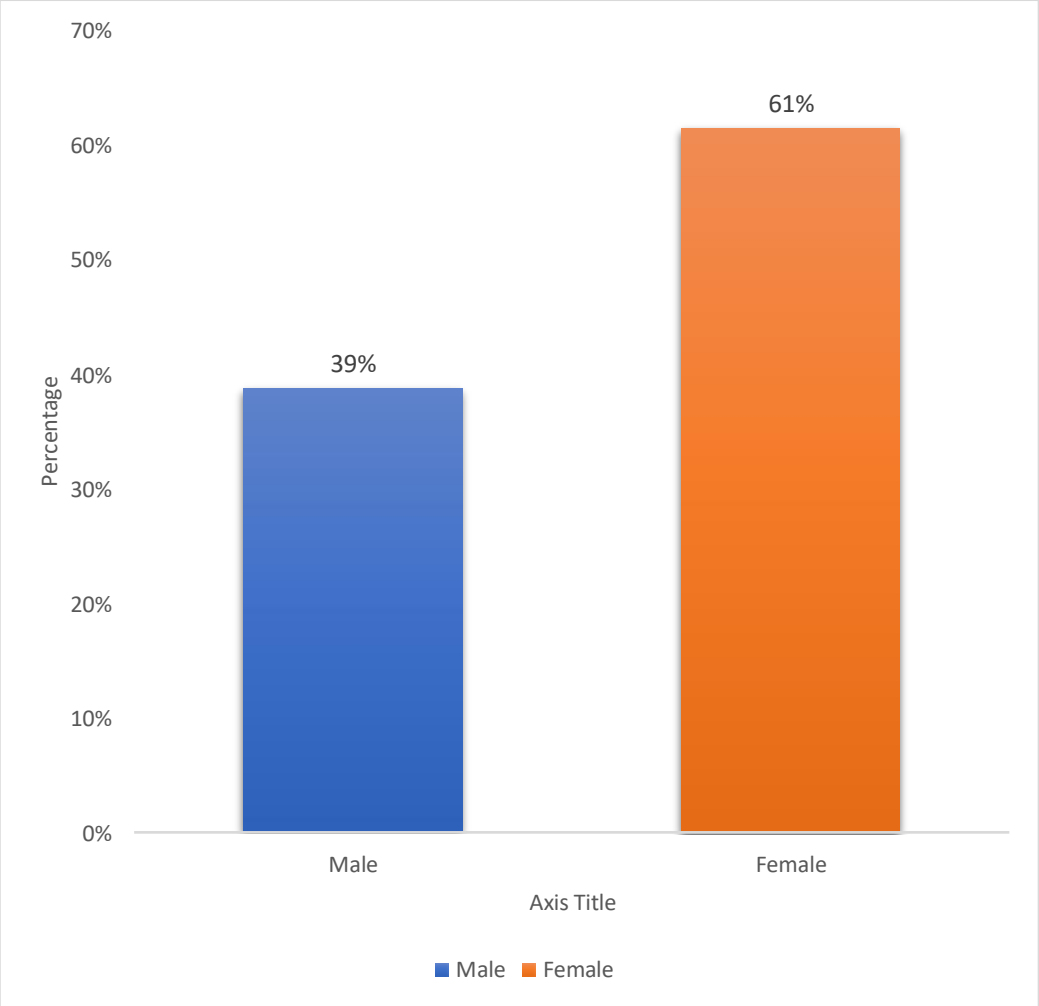

Figure 2: Gender of the Respondents

Interpretation- 39% of the respondents of the sample population identified as male,while 61% identified as female.

Occupation of the Respondents

Occupation	*Responses*	*Percentage*
Student	264	88%
Educators	36	12%
Total	300	100%

Table 3: Occupation of the Respondents

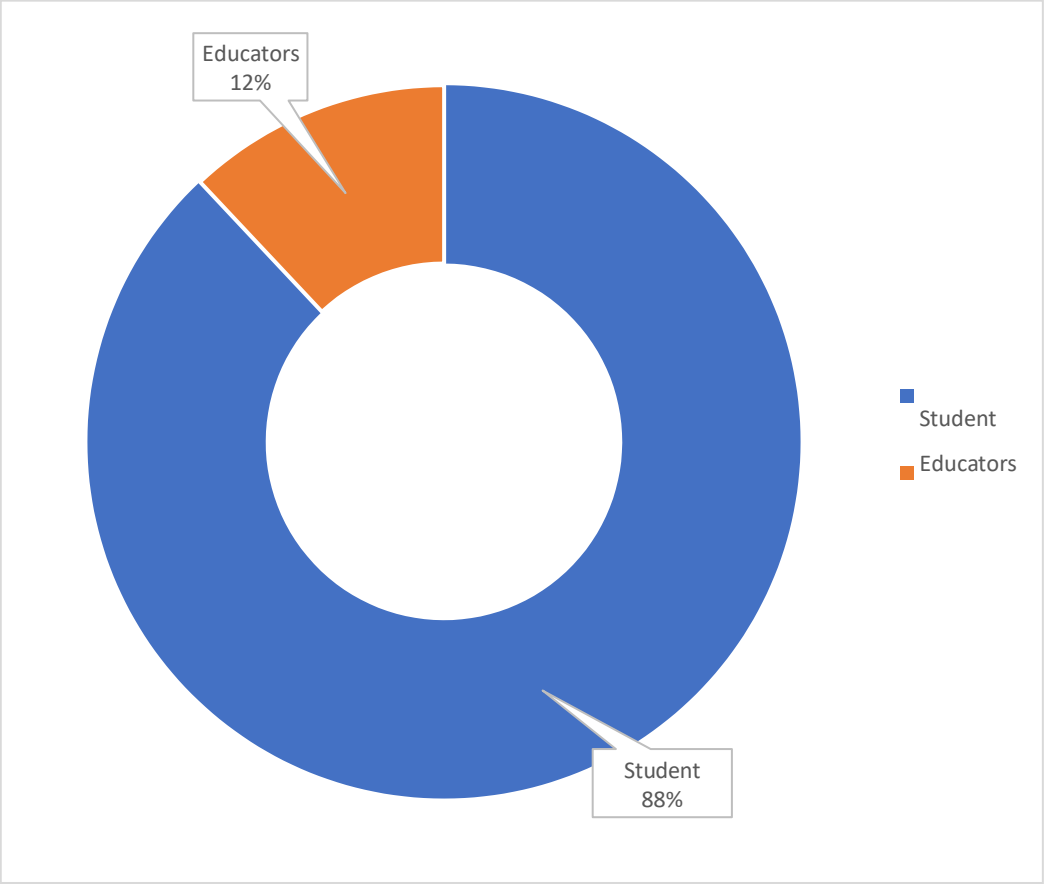

Figure 3: Occupation of the Respondents

Interpretation- The survey concentrates on two primary occupational categories. Themajority of respondents (88%) are students enrolled in diverse management programs.A smaller fraction (12%) represents management faculties.

Evaluating the Usage Frequency of AI-Based Tools forAcademic (Studying or Teaching) Purpose

Options	*Responses*	*Percentage*
Daily	74	25%
Several Times in a Week	118	39%
Once a week	43	14%
Rarely	48	16%
Never	17	6%
Total	300	100%

Table 4: Evaluating the Usage Frequency of AI-Based Tools for Academic (Studying or Teaching) Purpose

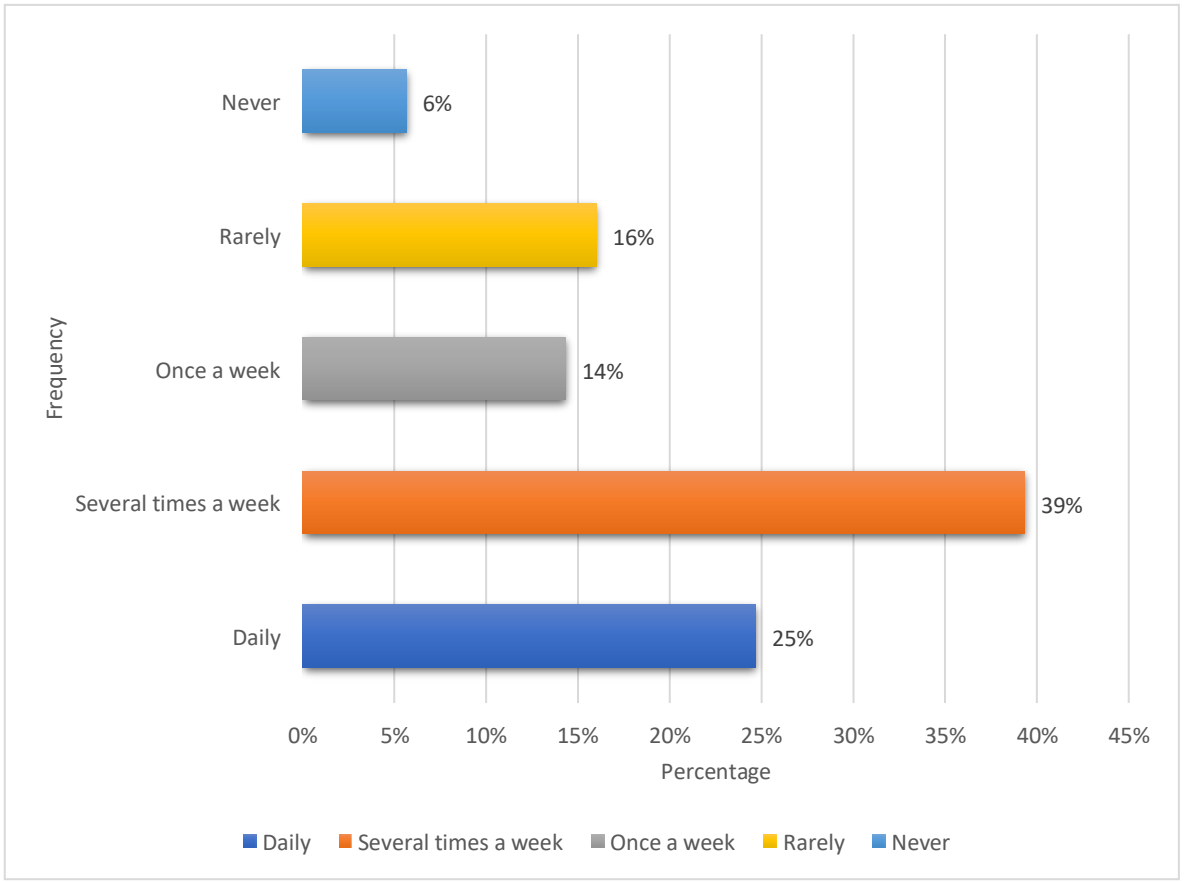

Figure 4: Evaluating the Usage Frequency of AI-Based Tools for Academic (Studying or Teaching) Purpose

Interpretation- Most respondents use AI tools weekly (39%) some use them regularly(25%), a small percentage use AI rarely (16%), a few weekly (14%), and a minority ofrespondents (6%) have never used AI.

Evaluating the Benefits of Introducing AI-Based Tools inManagement Studies

Options	*Responses*	*Percentage*
Personalised learning experiences	78	26%
Simulation of real-world business scenarios	33	11%
Increased student engagement	35	12%
More practical approach towards learning	55	18%
Shortening the time required to understand complex topics	100	33%
Total	300	100%

Table 5: Evaluating the Benefits of Introducing AI-Based Tools in Management Studies

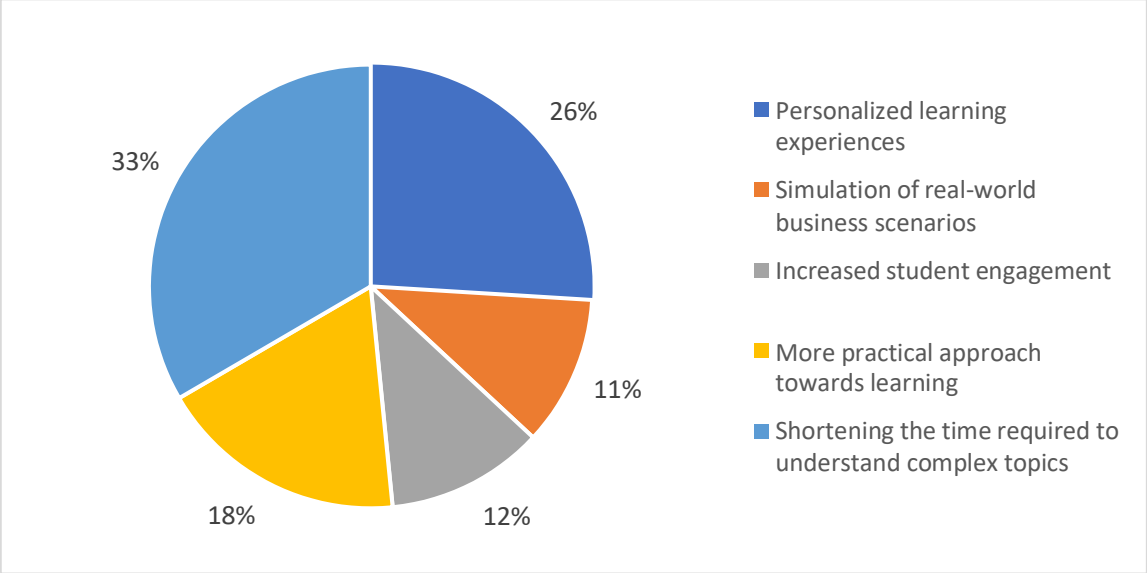

Figure 5: Evaluating the Benefits of Introducing AI-Based Tools in Management Studies

Interpretation- The majority believe AI Aids in grasping complex topics faster (33%),a major portion favour personalised learning (26%), some value AI's practical approach (18%), some noticed increased student engagement (12%), and a smaller portion appreciate AI simulating real-world situations (11%).

Evaluating the Ways Through Which AI Can Enhance theLearning Experience for Management Students

Options	*Responses*	*Percentage*
Replacing traditional textbooks and lectures with AI-generated content	56	19%
Providing personalised learning paths and feedback based on individual progress	57	19%
Providing a deeper understanding of management concepts and theories	69	23%
Assessing the strengths and weaknesses of individual students	39	13%
Providing more creative and in-time methods of learning	78	26%
Total	300	100%

Table 6: Evaluating the Ways Through Which AI Can Enhance the Learning Experience for Management Students

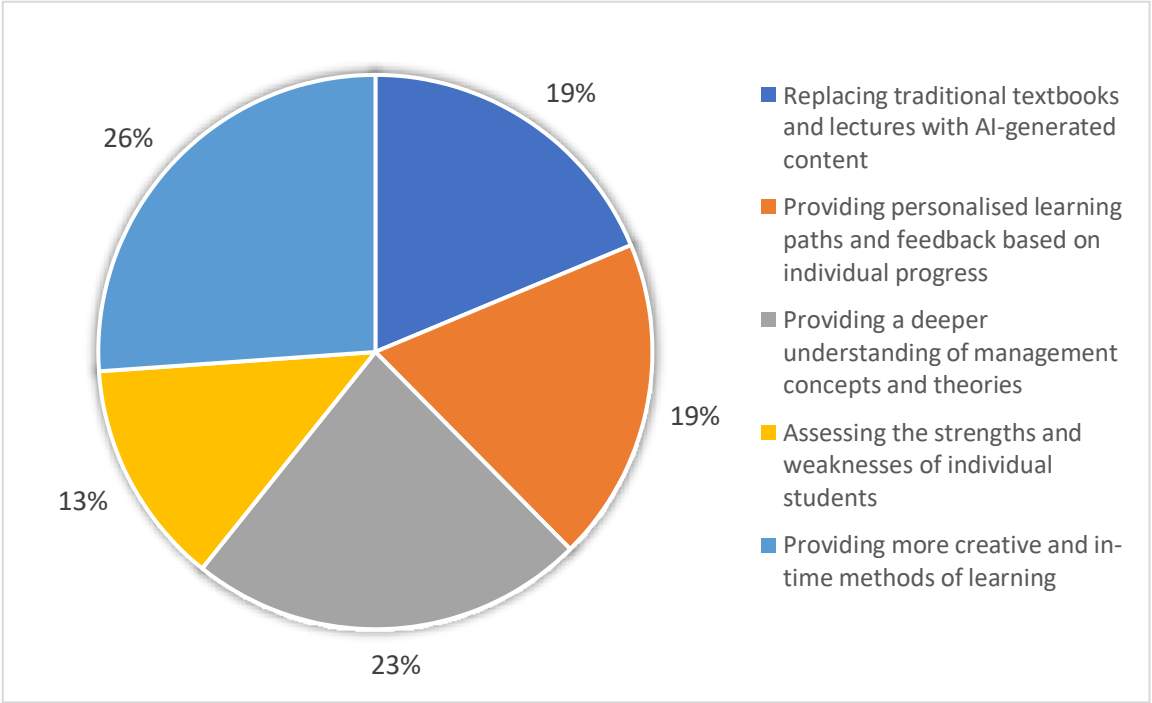

Figure 6: Evaluating the Ways Through Which AI Can Enhance the Learning Experience for Management Students

Interpretation- 26% see AI for creative/timely learning, 23% for deeper managementunderstanding, 19% for replacing traditional methods with personalised learning, and 13% for assessing strengths/weaknesses with personalization.

Evaluating the Aspect of Management Studies That CanBe Made More Dynamic and Practical Through AI Integration

Options	*Responses*	*Percentage*
Access to up-to-date industry trends and data	67	22%
Practical case studies and real-world applications	73	24%
Flexibility in course structures	52	17%
Interacting with AI-driven chat-bots simulating business scenarios.	48	16%
Enabling students to practice decision-making in real-time simulated business environment	60	20%
Total	300	100%

Table 7: Evaluating the Aspect of Management Studies That Can Be Made More Dynamic and Practical Through AI Integration

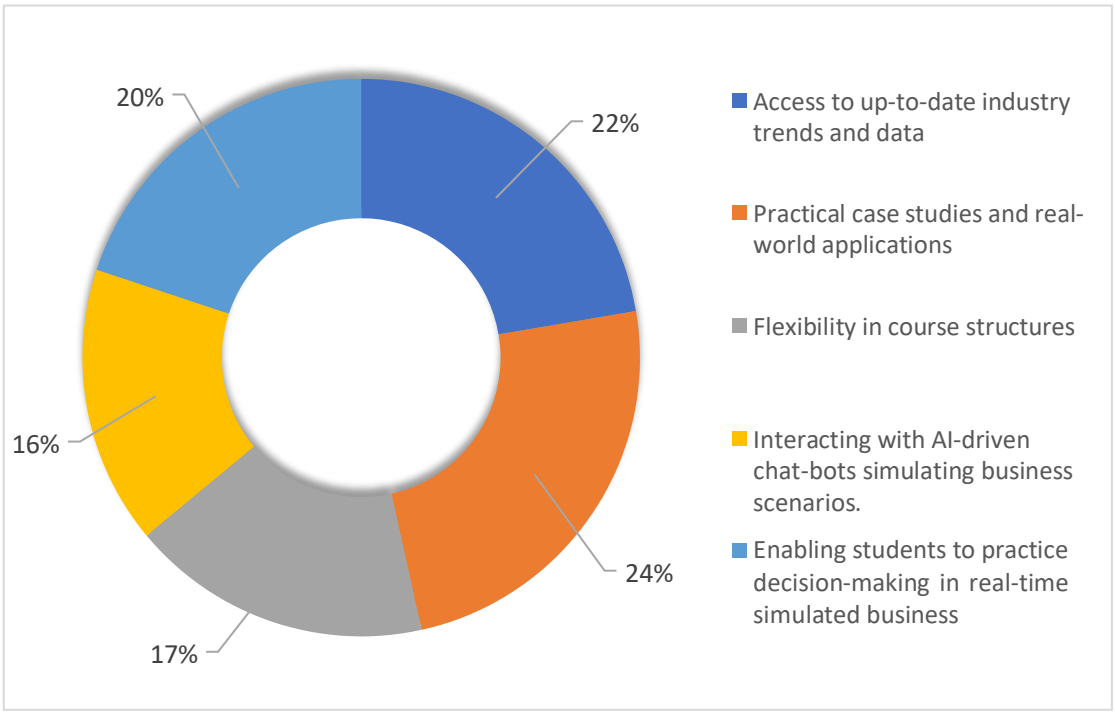

Figure 7: Evaluating the Aspect of Management Studies That Can Be Made More Dynamic and Practical Through AI Integration

Interpretation- 24% prefer practical case studies, 22% want industry trend access, 20% value AI simulations for decision-making practice, 17% seek flexible course structures,and 16% are interested in AI-driven chatbots for business scenarios.

Evaluating the Critical Importance in Addressing the Challenge of Budget and Funding Allocation to Make AI a Reality in the Field of Management Studies

Options	*Responses*	*Percentage*
Extremely Important	80	27%
Important	127	42%
Moderately Important	75	25%
Slightly Important	12	4%
Not Important	6	2%
Total	300	100%

Table 8: Evaluating the Critical Importance in Addressing the Challenge of Budget and Funding Allocation to Make AI aReality in the Field of Management Studies

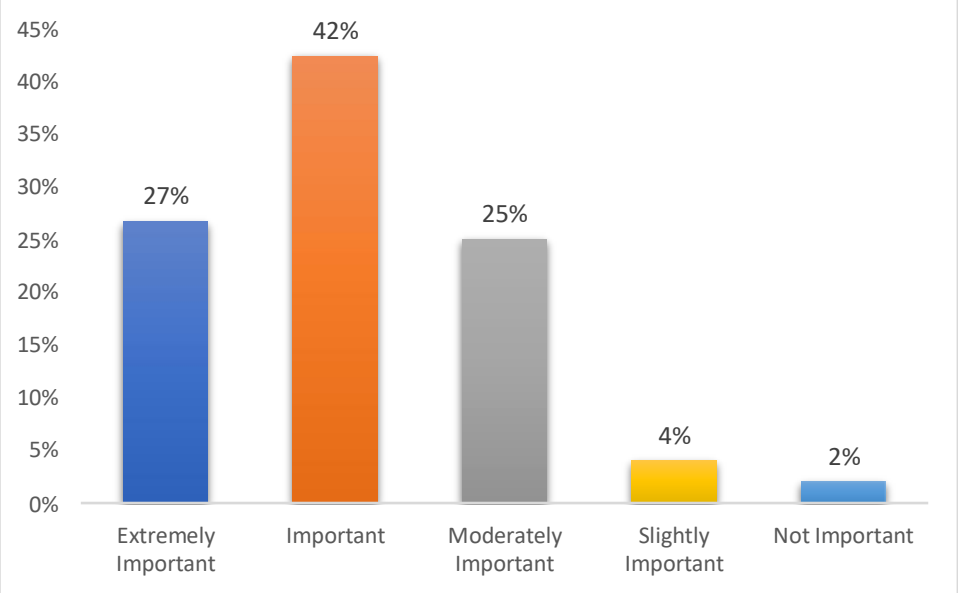

Figure 8: Evaluating the Critical Importance in Addressing the Challenge of Budget and Funding Allocation to Make AI aReality in the Field of Management Studies

Interpretation- A combined 69% of respondents believe that addressing budget and funding challenges is crucial for integrating AI into management studies, of this group,27% consider it extremely important, while 42% view it as very important. Meanwhile,25% of respondents consider this aspect moderately important.

Evaluating The Number of Respondents Who Face Difficulties in Adapting To AI-Based Tools for Academic Purposes

Options	*Responses*	*Percentage*
Yes	47	16%
No	164	55%
Maybe	89	30%
Total	300	100%

Table 9: Evaluating the number of respondents who face difficulties in adapting to AI-based tools for academic purposes

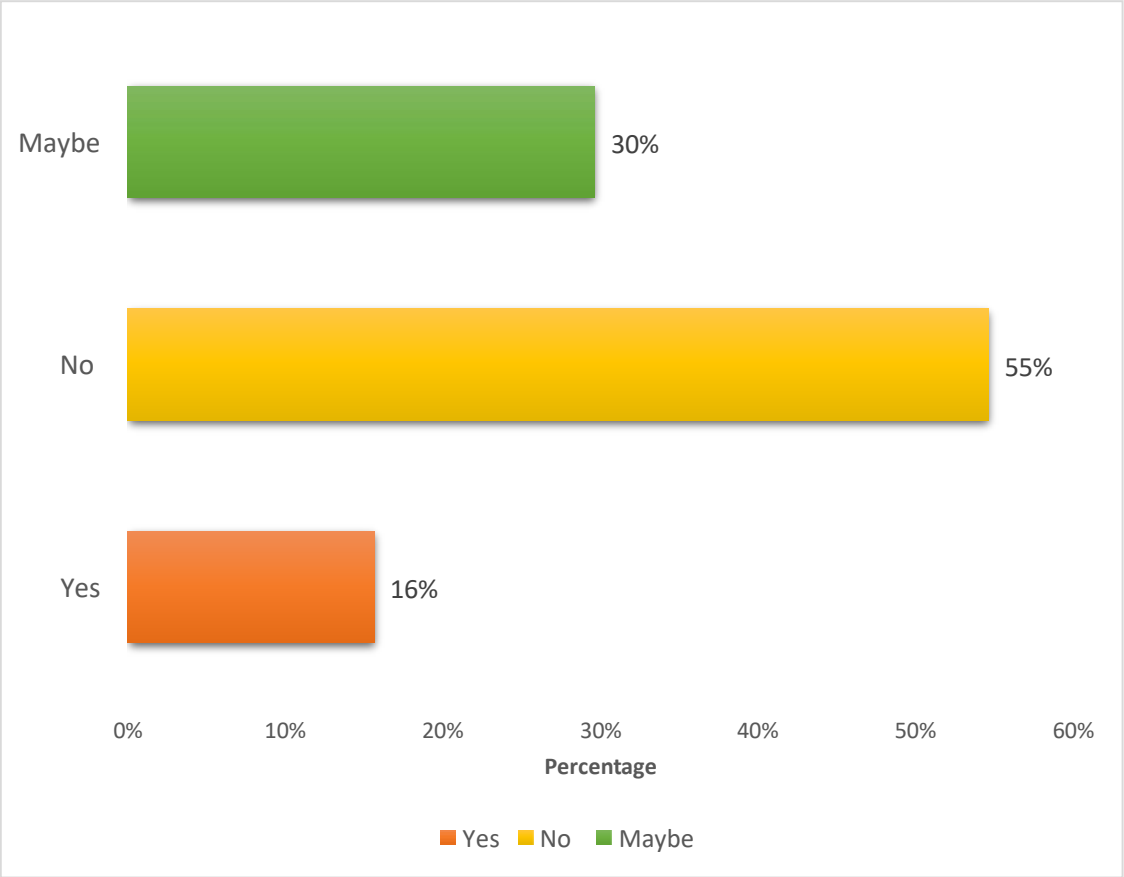

Figure 9: Evaluating the number of respondents who face difficulties in adapting to AI-based tools for academic purposes

Interpretation- More than half of the respondents (55%) reported no difficulties in adapting to AI-based tools for academic purposes, while a notable percentage (29%) expressed uncertainty or a neutral stance. A relatively smaller proportion (16%) acknowledged facing challenges in adjusting to these tools.

Evaluating the Critical Importance of TechnologicalUpgrades for Making AI a Reality in the Field of Management Studies

Options	*Responses*	*Percentage*
Extremely Important	86	29%
Important	123	41%
Moderately Important	72	24%
Slightly Important	15	5%
Not Important	4	1%
Total	300	100%

Table 10: Evaluating the Critical Importance of Technological Upgrades for Making AI a Reality in the Field of Management Studies

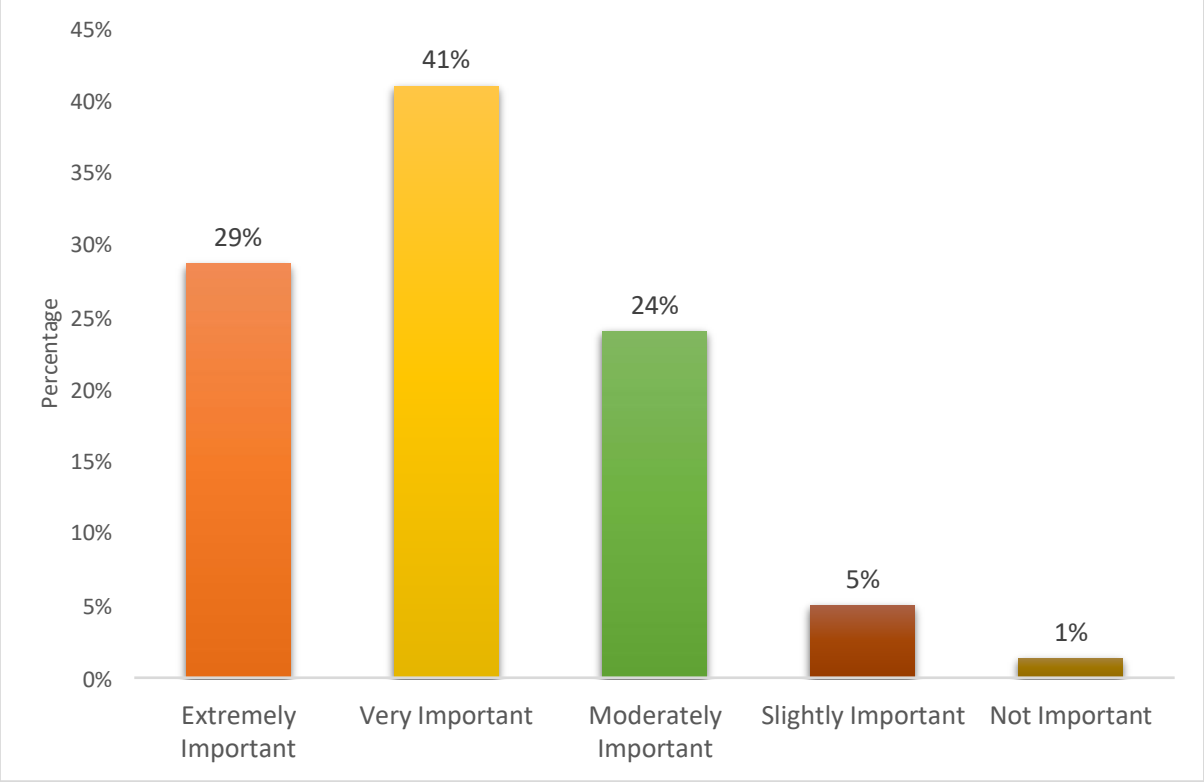

Figure 10: Evaluating the Critical Importance of Technological Upgrades for Making AI a Reality in the Field of Management Studies

Interpretation- A significant portion of participants 29% recognize the crucial role oftechnological upgrades in realising AI in management studies, 41% deeming it very important, and 24% view it as moderately important.

Evaluating the Impact of AI-Based Technology on OverallAcademic Performance

Options	*Responses*	*Percentage*
Significant Positive Impact	120	40%
Positive Impact	130	43%
Minimal Impact	27	9%
No Impact	13	4%
Can't say	10	3%
Total	300	100%

Table 11: Evaluating the Impact of AI-Based Technology on Overall Academic Performance

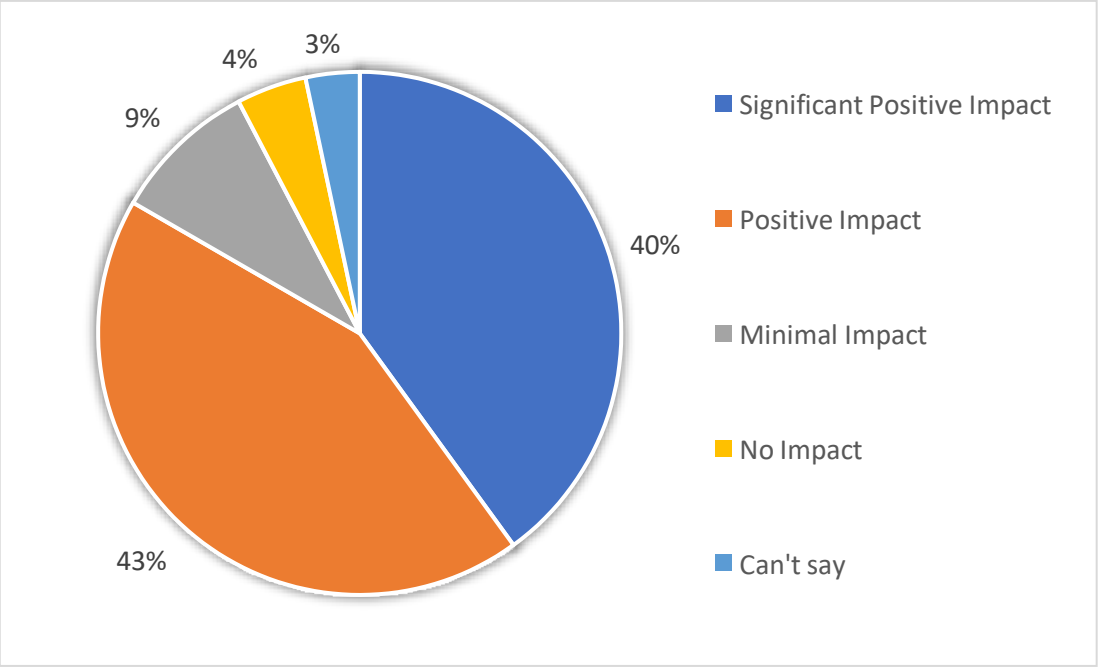

Figure 11: Evaluating the Impact of AI-Based Technology on Overall Academic Performance

Interpretation- A substantial percentage of respondents 40% believe that AI-based technology has a direct positive impact on their overall academic performance, while 43% acknowledge some positive influence. 9% perceive minimal impact, and a small fraction either does not believe AI affects their performance or hasn't used AI-poweredtools.

Evaluating the Influence of AI-Based Technology onStudent Engagement During Lectures or Learning Activities

Options	*Responses*	*Percentage*
Significant Enhancement	112	37%
Enhances to Some Extent	127	42%
Little Impact	34	11%
No Impact	12	4%
Can't Say	15	5%
Total	300	100%

Table 12: Evaluating the Influence of AI-Based Technology on Student Engagement During Lectures or Learning Activities

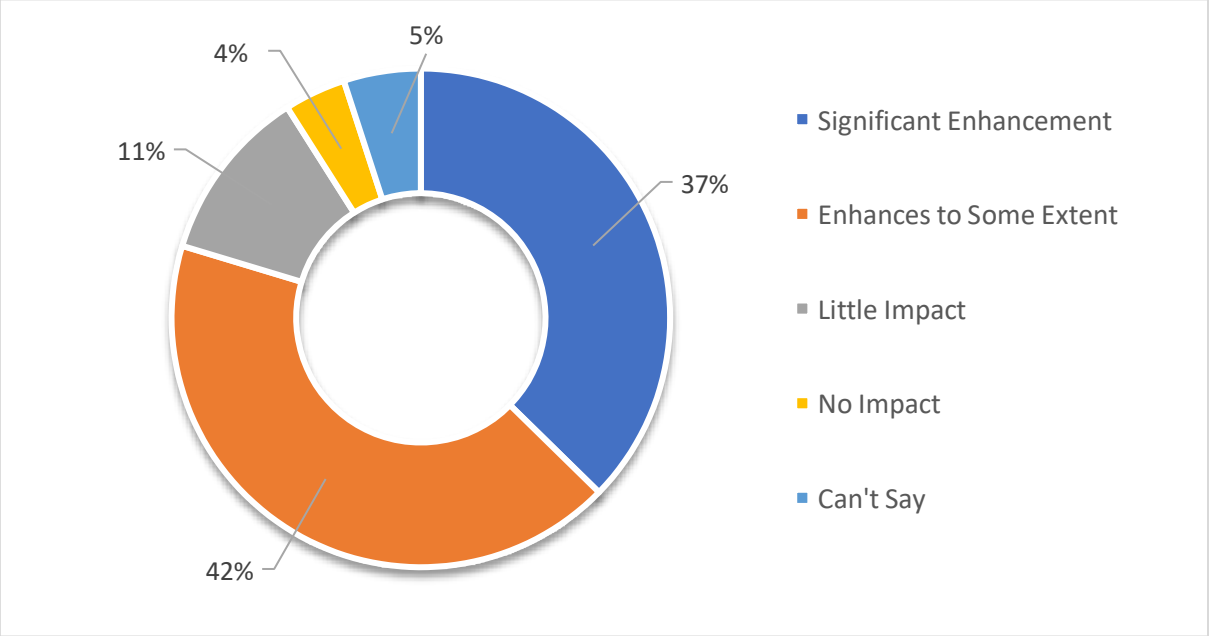

Figure 12: Evaluating the Influence of AI-Based Technology on Student Engagement During Lectures or Learning Activities

Interpretation- A combined 79% find that AI-based technology positively impacts student engagement, of which 37% state a significant enhancement, 42% note amoderate improvement and 11% feel there's little impact, while 9% haven't used AI tools.

Evaluating the Relation Between the Integration of AI-Based Technology in Studies and its Impact on SatisfactionLevels with the Learning Process

Options	*Responses*	*Percentage*
Satisfied	110	37%
Partially Satisfied	135	45%
No Change	31	10%
Dissatisfied	8	3%
Can't say.	16	5%
Total	300	100%

Table 13: Evaluating the Relation Between the Integration of AI-Based Technology in Studies and its Impact on SatisfactionLevels with the Learning Process

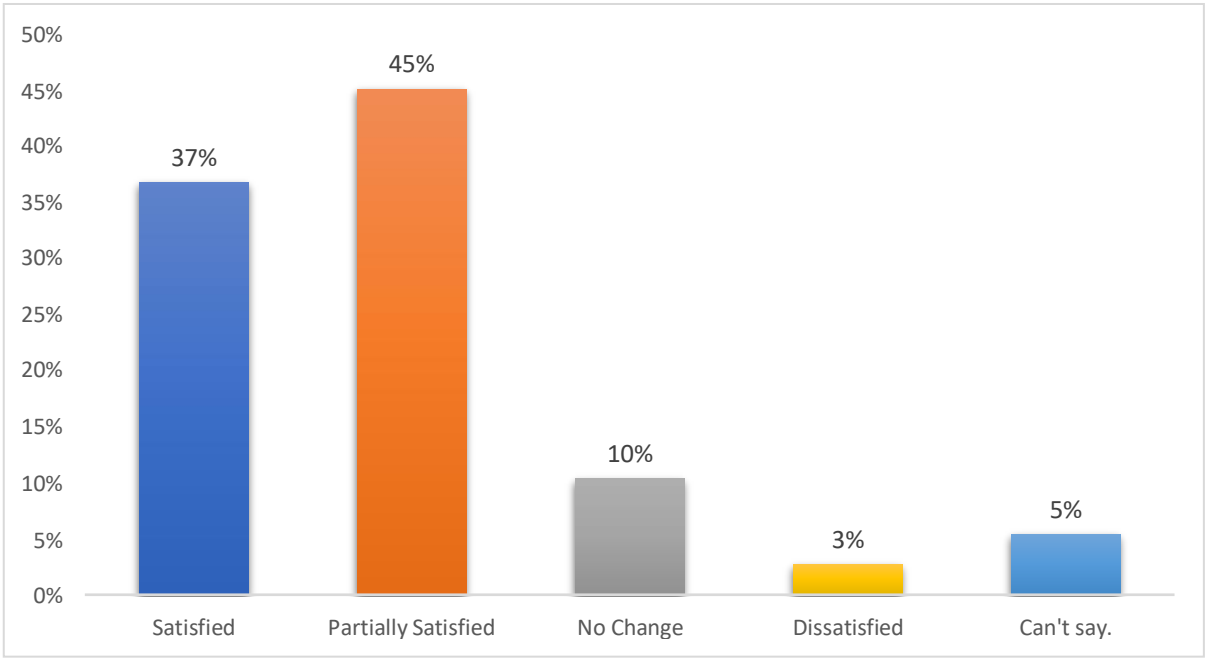

Figure 13: Evaluating the Relation Between the Integration of AI-Based Technology in Studies and its Impact on SatisfactionLevels with the Learning Process

Interpretation- 45% reported being somewhat satisfied, while 37% expressed being more satisfied with the use of AI-based technology in their studies. A noteworthy proportion (10%) indicated they didn't notice any difference in satisfaction and a smaller percentage (3%) chose the options expressing dissatisfaction with AI tools.

Evaluating The Preference for AI-Powered EducationalTools and Platforms Over Traditional Teaching Methods

Options	*Responses*	*Percentage*
Yes, definitely.	104	35%
Yes, but with some reservations.	111	37%
I'm not sure.	49	16%
No, I prefer traditional teaching methods	27	9%
Haven't used AI tools, can't say	9	3%
Total	300	100%

Table 14: Evaluating the Preference for AI-Powered Educational Tools and Platforms Over Traditional Teaching Methods

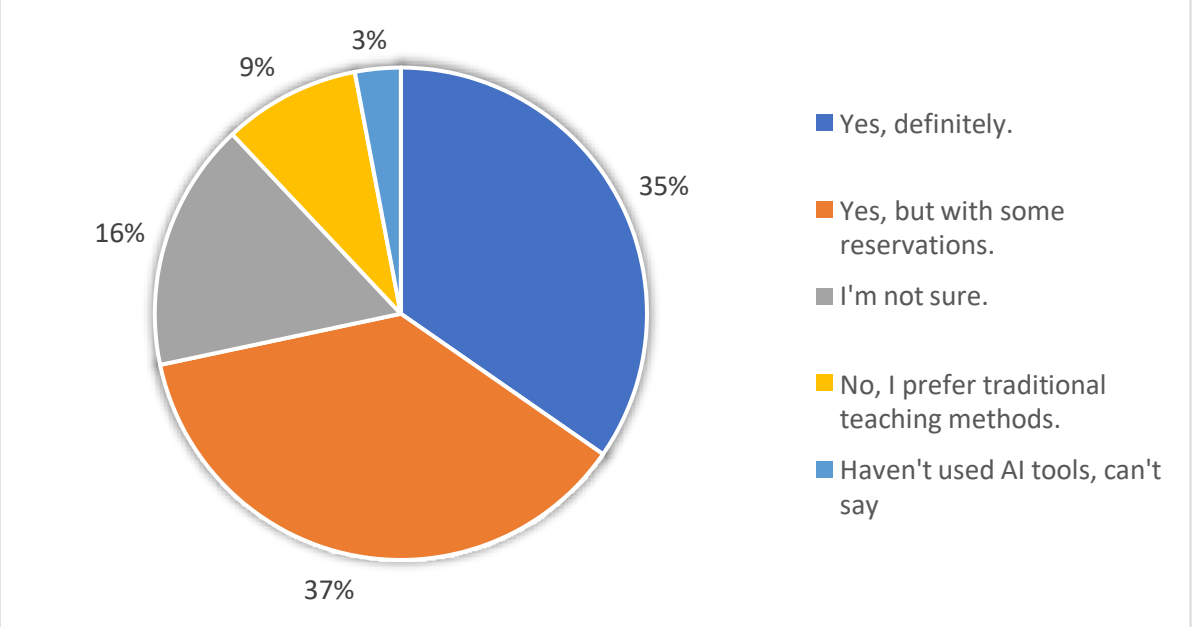

Figure 14: Evaluating the Preference for AI-Powered Educational Tools and Platforms Over Traditional Teaching Methods

Interpretation- 35% of respondents endorsed the idea of utilizing AI-powered educational tools, and 37% exhibited a positive inclination but with certain reservations.16% remained uncertain about their preference, while 9% favoured the traditional teaching methods. Moreover, 3% acknowledged not having used AI-powered tools.

Evaluating The Potential Contributions of AI Towards

Enhancing the Overall Quality of Management Educationin Patna

Categories	*Responses*	*Percentage*
Personalised Learning	77	26%
Efficiency and Time Management	68	23%
Practical Application	76	25%
Will Enhance Overall Quality	52	17%
Support to Educator	27	9%
Total	300	100%

Table 15: Evaluating the Potential Contributions of AI Towards Enhancing the Overall Quality of Management Education inPatna

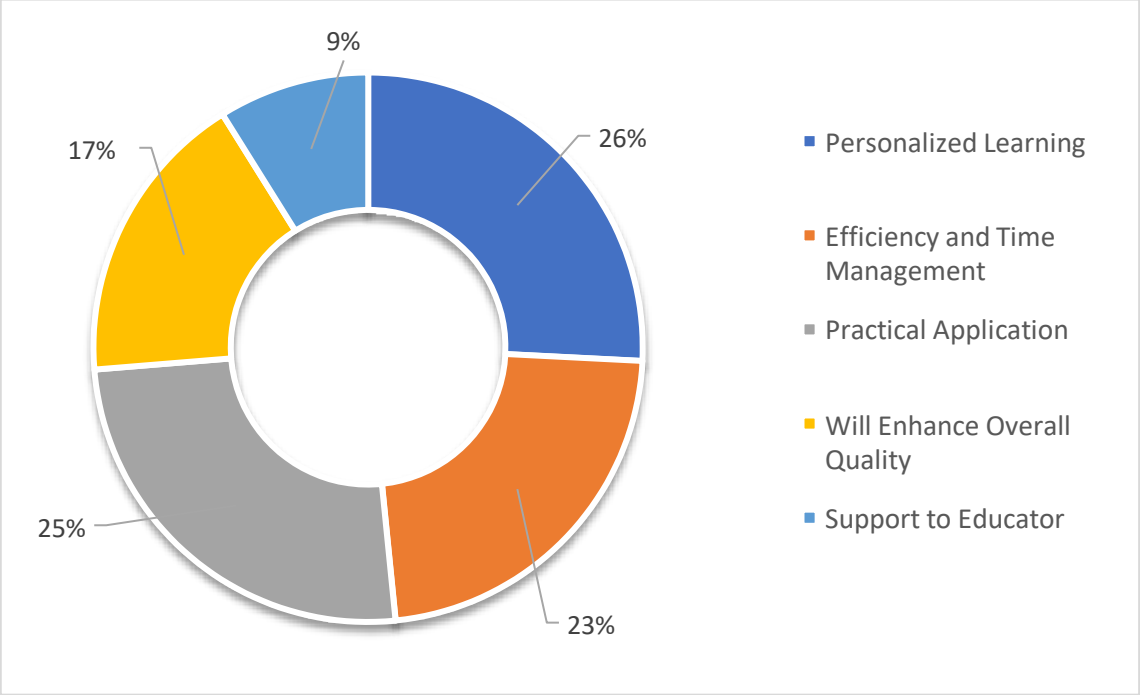

Figure 15: Evaluating the Potential Contributions of AI Towards Enhancing the Overall Quality of Management Educationin Patna

Interpretation- 26% see AI fostering personalised learning, 25% in facilitating practical application within, 23% in enhancing efficiency, 17% in elevating education quality, and 9% emphasize AI's supportive role for educators within this context.

Exploring the Potential of Artificial Intelligence (AI) To Transform Management Studies in The Region of Patna

Categories	*Responses*	*Percentage*
Balanced Perspective on Benefits and Challenges	75	25%
Improvement in Education Quality and Access	99	33%
Concerns about Implementation and Ethical Considerations	54	18%
Positive Impact and Enhancement	48	16%
Skills Enhancement and Practical Learning	24	8%
Total	300	100

Table 16: Exploring the Potential of Artificial Intelligence (AI) To Transform Management Studies in The Region of Patna

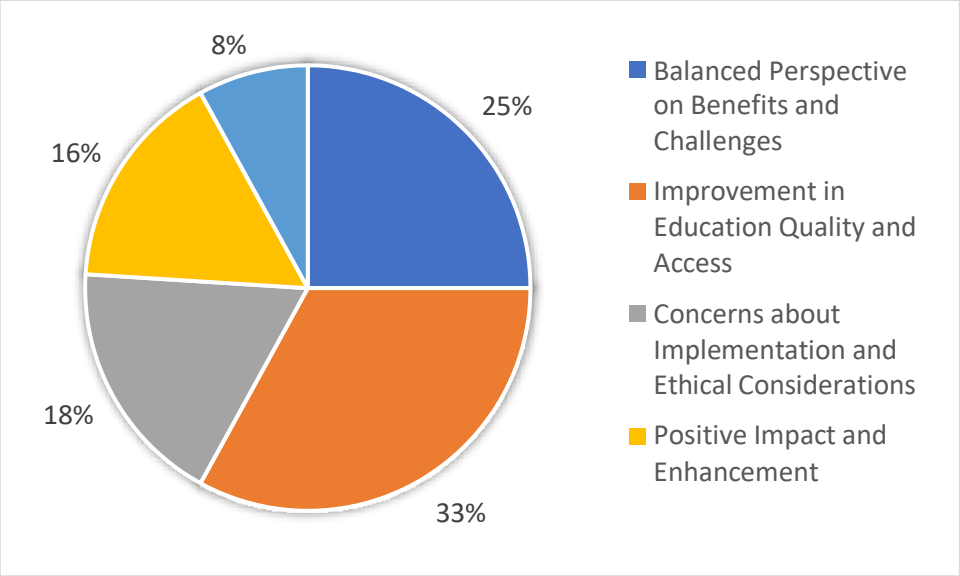

Figure 16: Exploring the Potential of Artificial Intelligence (AI) To Transform Management Studies in The Region of Patna

Interpretation- Around 33% of respondents advocated for AI-driven improvements in education, while 25% recognized its benefits and challenges equally. Approximately 18% expressed concerns about ethical implementation, with 16% highlighting AI's positive impacts. Additionally, 8% emphasized AI's potential for skills enhancement intransforming management studies in Patna.

FINDINGS OF THE STUDY

1. AI has been seen to positively affect academic performance and theseimprovements have been linked to AI.
2. A positive influence of AI on student engagement and satisfaction levels isapparent.
3. The integration of AI into management studies is perceived to give a boost,especially in practical case studies and day-to-day applications.
4. Moreover, it has been acknowledged that investments in technologicalinnovations are essential if AI is to be incorporated into management studies.
5. The preferred use of AI tools is also noted in relation to traditional teachingapproaches with various cautions and doubts expressed.

LIMITATIONS

The limitations faced while conducting the research are as follows-

1. Sample Size: While examining the management students from Patna on the subject, thus the findings could not be generally applicable due to the restricted number of participants involved in the study
2. Regional Focus: Findings may apply only to Patna in Bihar. Other regions and schools could be more complex.
3. Time Constraints: There could have been time constraints limiting the research that possibly would have affected the depth and breadth of data collection and analyses.

CONCLUSION

1. This study brings out the increased preference and use of AI-based tools by the respondents signifying an acceptance and incorporation of artificial intelligence in various academic issues.
2. The respondents realise that there are multiple advantages to using AI, for example, saving personal time, customization of study experiences, and actual utilisation of what is learned.
3. Participants agree that there is an urgent need to solve budget and funding issues sothat AI integration in academics runs smoothly.
4. A significant proportion of them experienced difficulties and uncertainties in adapting themselves to AI technology, showing how it is very important to have help in such processes.
5. Respondents highlight the critical importance of technological improvements and acknowledge that only through continuous enhancement of the technological infrastructure AI can be used to its full potential in management studies.
6. Respondents have given strong support to the fact that AI has increased active learning amongst students while in lecture hall settings among other learningsituations.
7. Respondents in the study reported an increase in satisfaction due to introducing AI-based technologies into educational activities.
8. One can note a changing trend of preferences, towards the use of AI-driven learningtools and against conventional teaching methods.
9. The research positively stresses the belief among respondents that AI can transformthe management studies in Patna. This will happen when the focus is on practice- based knowledge and globally oriented towards addressing current challenges in academia.

RECOMMENDATIONS

1. Training and Development: Training programs and workshops for students and educators to familiarise them with different AI tools that can be used in the field ofmanagement studies to aid skills enhancements such as decision-making

and problem-solving and provide real-time industry experience to the students making teaching and learning process more efficient and standardised.

2. Collaborative effort: Collaborations between management institutions, and AI experts to facilitate knowledge sharing, and access to resources.

3. Budget and funding: Funding opportunities for AI integration in management studies by IT and tech firms elevating the standard of management studies in accordance with the global level.

4. Awareness creation: Awareness campaign involving workshops, seminars in management institutions, ed-tech websites and social media platforms to disseminate information among a wider population of students and teachers.

5. Guidelines and monitoring: Development of ethical guidelines for AI integration inthe field of management studies addressing data privacy, algorithmic bias, transparency in decision-making processes, etc and creation of various committees within institutions to oversee the implementation of the provided guidelines.

REFERENCES

BOOKS

1. Kothari, C.R. (2012). Research Methodology, New Age International.

2. Kumar Ranjit (2005). Research Methodology, Pearson Education Australia.

JOURNALS

1. Aditi Bhutoria (2022). Personalised education and Artificial Intelligence in the United States, China, and India: A systematic review using a Human-In-The-Loop model, Computers and Education: Artificial Intelligence 3 (2022) 100068

2. Jiahui Huang, Salmiza Saleh, Yufei Liu (2021). A Review on Artificial Intelligencein Education, Academic Journal of Interdisciplinary Studies, 10(3).

3. Shahsuzan Zakaria1, Suhally MAIzan Abdul Manaf, Mohd Talmizie Amron. MohdTaufik Mohd Suffian, (2023). Has the World of Finance Changed? A Review of theInfluence of Artificial Intelligence on Financial Management Studies, Information Management and Business Review (ISSN 2220-3796) Vol. 15, No. 4(SI), pp. 420- 432, December 2023

4. Weng Marc Lim, Asanka Gunasekara, Jessica Leigh Pallant, Jason Ian Pallant, Ekaterina Pechenkina (2023). Generative AI and the future of education: Ragnar¨ok or reformation? A paradoxical perspective from management educators, The International Journal of Management Education 21 (2023) 100790.

5. Xuesong Zhai, Xiaoyan Chu, Ching Sing Chai, Morris Siu Yung Jong, Andreja Istenic, Michael Spector, Jia-Bao Liu, Jing Yuan, and Yan Li (2021). A Review of Artificial Intelligence (AI) in Education from 2010 to 2020. Hindawi Complexity Volume 2021.

WEBSITE

1. IBEF. (2023, May). Future of Data Science and AI in India. Retrieved fromhttps://www.ibef.org/research/case-study/future-of-data-science-and-AI-in-india

2. Times of India (2021, Dec). Artificial Intelligence in education. Retrieved from https://timesofindia.indiatimes.com/readersblog/newtech/artificial-intelligence-in- education-39512/