ISSN: 2231- 4687
Vol.-2 Issue-01, January 2026

International Journal of Management and Economics (IJME)

Artificial Intelligence in Commerce and MBA Programs: Bridging the Gap Between Data-Driven Insights and Managerial Decision-Making

Abstract: -

The rapid rise of Artificial Intelligence (AI) is reshaping commerce and management education, transforming how decisions are made, forecasts are generated, and business processes are optimized. In MBA programs and commerce courses, AI tools are increasingly being used to strengthen analytical skills, improve strategic planning, and boost operational efficiency. This study looks at how AI helps bridge the gap between raw data and informed managerial decisions, exploring how students and professionals use AI to gain business insights and make predictive, data-driven choices. It examines the current level of AI literacy among commerce and MBA learners, highlights the challenges of integrating AI into educational programs, and considers ethical and practical concerns around its use. It investigates the current level of AI literacy among commerce and MBA learners, identifies challenges in integrating AI into curricula, and evaluates perceptions regarding ethical and practical implications of AI adoption. Ultimately, the study emphasizes that AI literacy is more than a technical skill, it is a strategic competency essential for success in today's business world.

Keywords: Artificial Intelligence, Commerce, MBA Programs, Data-Driven Decision-Making, AI Literacy, Ethics.

Introduction: -

The role of technology in business and management has evolved dramatically over the past few decades. From the early days of using computers for accounting and spreadsheets in the 1980s to the rise of digital platforms and e-commerce in the 2000s, every wave of innovation has reshaped how organizations function. Today, Artificial Intelligence (AI) represents the next major leap, transforming not only business practices but also the way commerce and MBA programs prepare future leaders. Artificial Intelligence (AI) represents the next transformative leap, driving a shift from traditional digital literacy to AI literacy.

The formal foundation of AI was laid in the mid-20th century. In 1950, Alan Turing introduced his groundbreaking paper "Computing Machinery and Intelligence," proposing the famous Turing

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Test to evaluate whether machines could mimic human intelligence. This sparked academic interest in exploring the possibilities of machine-based reasoning. The official birth of AI as a scientific discipline took place at the Dartmouth Conference in 1956, led by John McCarthy, Marvin Minsky, Herbert Simon, and Allen Newell. Early optimism was high, with researchers developing programs capable of solving mathematical problems and playing games like chess. However, limited computational resources and unrealistic expectations led to periods of stagnation known as "AI winters." However, despite AI's growing importance, many commerce and MBA curricula still focus heavily on traditional managerial training. This creates a gap between raw data availability and informed decision-making.

Significance of study: -

1.**For Students: -** Helps students understand their current level of AI literacy. Creates awareness of the technical, analytical, and ethical skills required to use AI in decision-making. Prepares them for professional roles where AI tools will be central to forecasting, strategy, and operations.

2.**For Educators & Institutions:** - Provides insights into gaps between existing curricula and industry expectations. Guides curriculum development by embedding AI-related concepts, hands-on training, and ethics. Supports the adoption of modern teaching methods that integrate AI into business and management education.

3.**For Policy-Makers & Academic Leaders:** -Contributes evidence to shape policies that promote AI literacy in higher education. Encourages reforms to align academic programs with evolving business and technological landscapes. Helps design standards and frameworks for AI integration across management disciplines.

4.**For Businesses & Industry:** -Ensures future managers are prepared to apply AI for data-driven insights, process optimization, and strategic growth. Build confidence that graduates can bridge the gap between technical capabilities and business decision-making. Promotes responsible and ethical adoption of AI within organizations.

5.**For the Society:** -Contributes to a workforce capable of adapting to technological disruption. Highlights the importance of balancing efficiency with ethical awareness in AI-driven environments. Ensures graduates not only have employability skills but also the mindset to make responsible, fair, and human-centered decisions.

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Objectives: -

1. To assess the current level of AI literacy among commerce and MBA students and determine their readiness to use AI tools for managerial decision-making.
2. To explore how AI can help improve data analysis, forecasting, and process efficiency in commerce and management education.
3. To identify challenges and barriers in integrating AI competencies into commerce and MBA curricula, including technical, ethical, and practical concerns.
4. To examine students' and professionals' perceptions and attitudes toward AI adoption in business decision-making and strategic planning.
5. To propose strategies for embedding AI literacy into higher education programs, focusing on developing technical knowledge, critical thinking, and ethical awareness for effective managerial decision-making.

Research method: -

The present study adopts a **descriptive and analytical research design** to examine the role of Artificial Intelligence (AI) in commerce and MBA programs, with particular emphasis on bridging the gap between data-driven insights and managerial decision-making.

The **descriptive research design** is used to assess the existing level of AI literacy, awareness, and exposure among commerce and MBA students. It helps systematically describing the characteristics, opinions, and attitudes of respondents regarding the use of AI tools in business education and management practices. Analytical **research design** is employed to analyze the relationships between variables such as AI awareness, perception toward AI adoption, readiness for managerial decision-making, and perceived benefits and challenges of AI integration. This approach enables a deeper understanding of how AI competencies influence managerial thinking and decision-making effectiveness. By combining both descriptive and analytical approaches, the study ensures a comprehensive examination of the status, challenges, and future potential of AI in commerce and management education.

Sample Size and Sampling Technique: -

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A sample size ranging from **120 to 200 respondents** was selected for the purpose of the study. The sample size was considered adequate to generate meaningful insights while remaining manageable within time and resource constraints. The study employed a **convenience sampling technique**, wherein respondents were selected based on their accessibility, availability, and willingness to participate. This method was chosen due to ease of data collection and the exploratory nature of the research.

The sample consisted of:

- Commerce students (UG and PG)
- MBA students
- Business and management professionals.

This sampling approach ensured representation from both **academic institutions** and **practical business environments**, thereby enhancing the relevance of the findings to both educational and managerial contexts.

Review of literature: -

Recent scholarship shows that business schools are actively experimenting with artificial intelligence (AI), but the depth of integration is still uneven. Surveys conducted by the MBA Roundtable and the Graduate Business Curriculum Roundtable (2022) reveal that many institutions have already adopted learning analytics (LA) across different levels of their curricula. However, the extent of adoption often depends on institutional size, governance structures, and available resources. Schools with stronger strategic commitment and trained staff are better positioned to translate analytics into meaningful pedagogical practices. In contrast, others remain at the pilot stage, struggling to embed AI into assessment and decision-focused learning outcomes.

Among the available AI tools, learning analytics dashboards and early-warning systems are widely recognized as some of the most actionable applications for commerce and MBA education. These tools allow faculty to monitor student engagement, predict performance risks, and design targeted interventions. Systematic reviews confirm that when educators actively engage with LA outputs, the technology can boost retention and guide personalized support (Wang, 2024; Garzón, 2025). Yet, researchers caution that LA alone does not guarantee improved managerial reasoning. If

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dashboards are used passively treated as “answers” rather than inputs for reflection students may overlook the need for trade-off analysis and judgment. To truly foster decision-making skills, analytics must be paired with interpretive scaffolds, such as exercises requiring students to explain, debate, and justify their managerial choices.

Another strand of literature highlights the role of explainable AI (XAI) in bridging the gap between model outputs and human decision-making. Studies emphasize that while technical explainability methods enhance transparency, they are only part of the solution. Students must also be taught how to interrogate explanations, identify model limitations, and integrate uncertainty into managerial reasoning. Pedagogical interventions that encourage learners to critique AI rationales or defend their decisions considering model outputs are seen as effective ways to avoid overreliance and reduce automation bias.

The rise of generative AI tools such as large language models (LLMs) has added another dimension to the conversation. Reports from Ithaka S+R (2024) document rapid uptake among both students and faculty, with uses ranging from idea generation and report drafting to simulating stakeholder perspectives. These affordances open new opportunities for scenario-based learning, where students can practice decision-making in complex, simulated environments. However, the same reports caution against unstructured use, which risks students outsourcing critical thinking to the model. To address this, scholars recommend redesigning assessments: incorporating reflective logs, oral defenses, and process-based grading so that managerial reasoning not just polished outputs remain at the core of evaluation. When LLMs are positioned as structured partners, rather than shortcuts, they can enrich decision practice by challenging students to critically assess and justify their choices.

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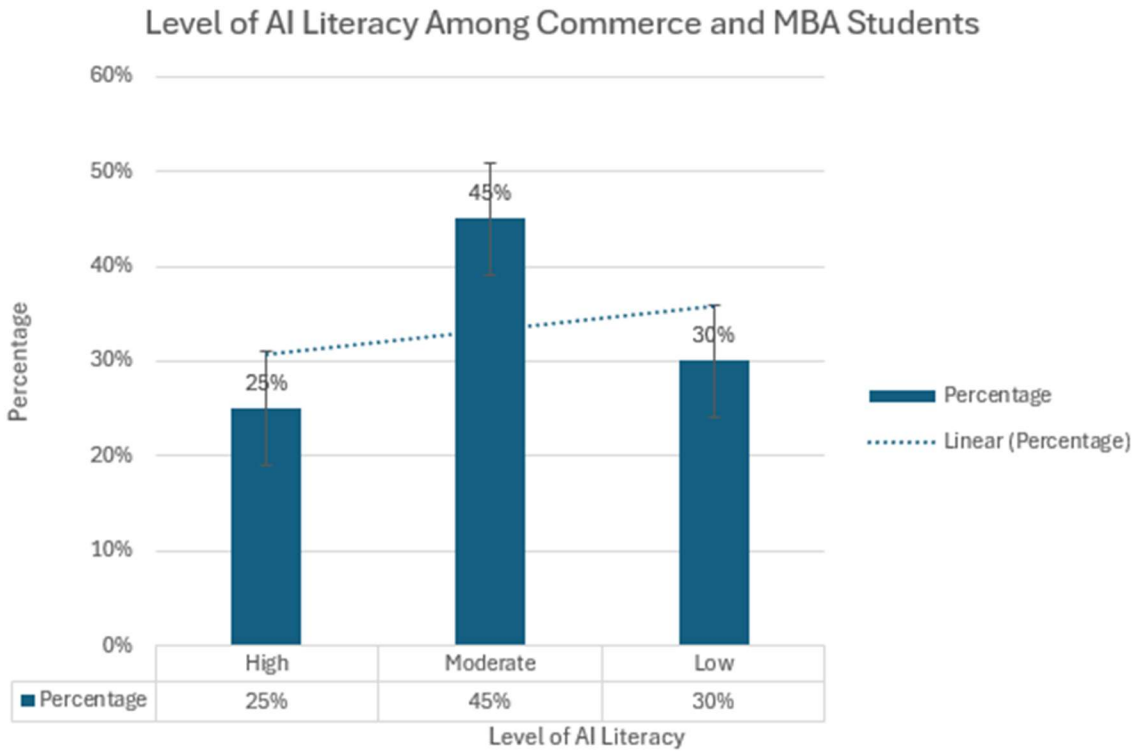
Data Interpretation and Analysis:

Pie Chart 1:



Interpretation: -The pie chart shows that 45% of respondents possess a moderate level of AI literacy, while 30% have low AI literacy. Only 25% demonstrate a high level of AI understanding, indicating a significant gap between awareness and advanced application. This highlights the need for structured AI skill development in commerce and MBA curricula.

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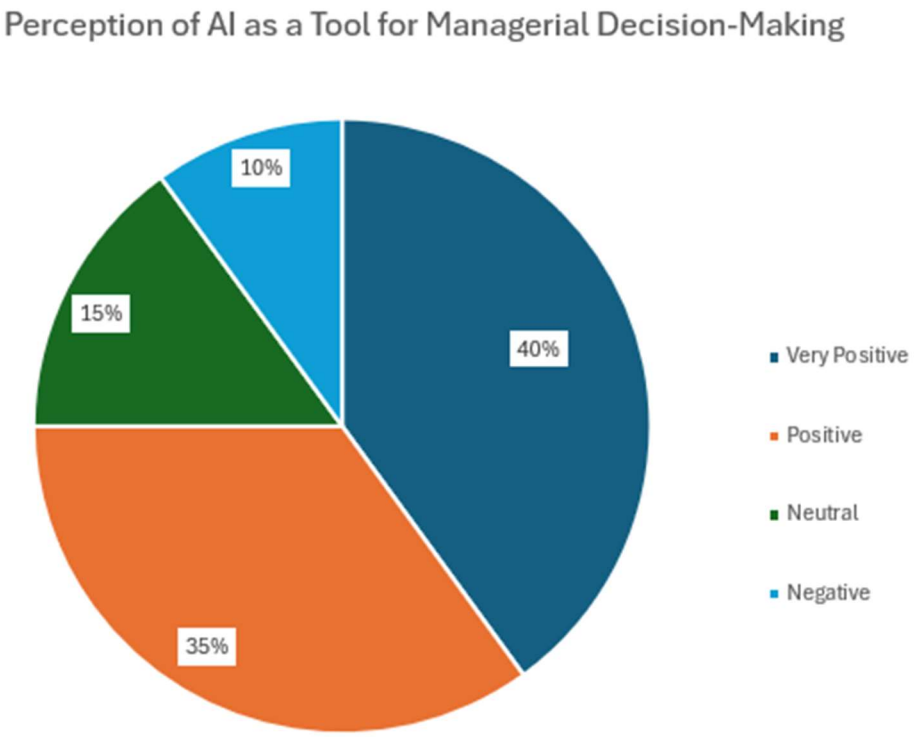
Pie Chart 2:



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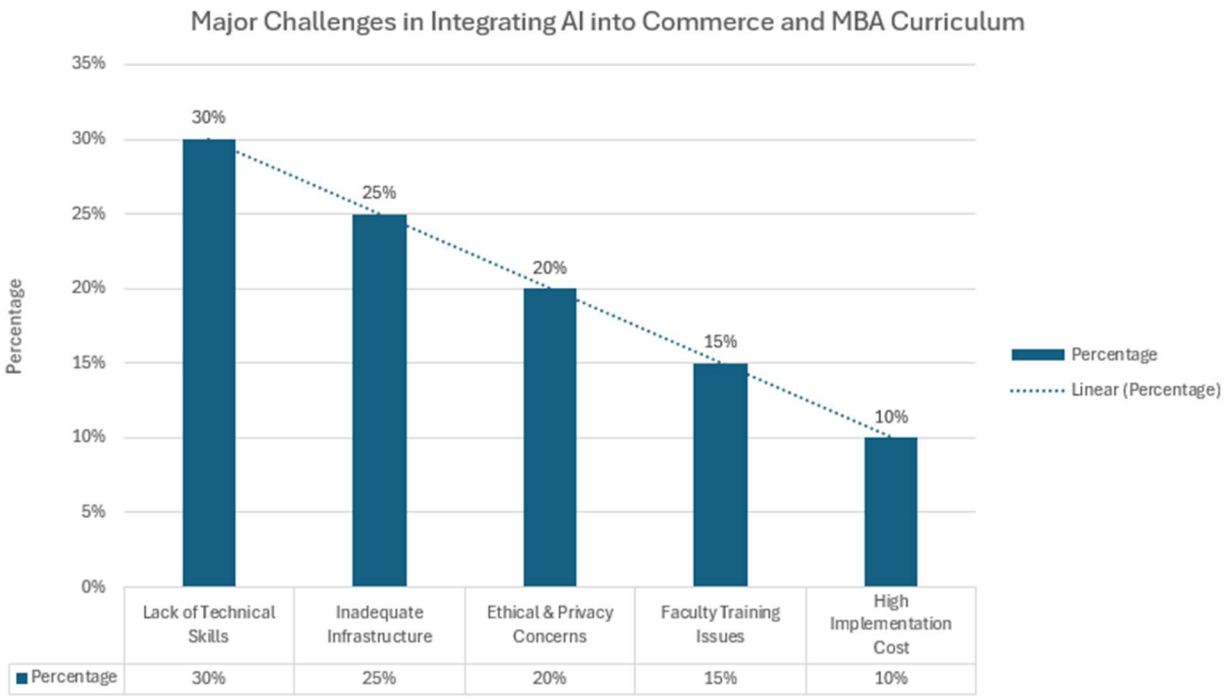
Pie Chart 3:



Interpretation: -

The pie chart reveals that the **lack of technical skills (30%)** is the most significant barrier to AI integration, followed by **infrastructure limitations (25%)**. Ethical and privacy concerns also form a notable portion, emphasizing the need for responsible AI education.

Discussion: -

The findings of this study make it clear that Artificial Intelligence is no longer just a buzzword in business schools it is gradually shaping how students learn, analyze, and make decisions. However, the way AI is currently being used in commerce and MBA programs show both exciting opportunities and real challenges. One of the most important insights is that while students are generally aware of AI tools such as dashboards, chatbots, or predictive models, many still lack the ability to translate these outputs into sound managerial decisions. This reflects what earlier studies also suggested: technology can support learning, but without critical thinking and interpretation, it risks being reduced to a passive reporting tool. For example, if a dashboard predicts falling sales,

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the real skill lies in questioning why this might be happening, weighing different options, and making a reasoned decision not simply trusting the prediction at face value.

Another area that stands out is the need for explainability. Students often find AI more trustworthy when it can show how it arrived at its conclusions. Yet, explainability by itself is not enough. Learners must also be trained to probe deeper to ask whether the AI might be biased, whether the data feeding is reliable, and whether the prediction fits the business context. Without this reflective layer, even the most transparent AI system could lead to blind acceptance and poor decision-making.

The growing use of generative AI, especially tools like large language models, has added a new dimension to management education. Many students and faculty members use these tools for brainstorming, drafting reports, or simulating real-world scenarios. On the positive side, this allows learners to practice decision-making in complex and creative ways. On the negative side, if used carelessly, such tools can encourage dependency and discourage original thought. This is why educators are now rethinking assessment methods placing more emphasis on reflective writing, oral defenses, and process-oriented evaluation so that students show how they reached a decision, not just a polished final answer.

At the institutional level, the discussion also points to differences in how schools are adopting AI. Larger universities with more resources are moving faster, embedding AI tools across their programs, while smaller institutions often remain at a pilot stage. This uneven progress suggests that stronger policies, training, and collaborations are needed so that AI literacy does not become a privilege of only a few institutions.

Findings: -

- **Awareness but limited application: -** Commerce and MBA students are increasingly aware of AI tools such as dashboards, chatbots, and predictive models. However, their ability to convert AI-generated insights into strong managerial decisions remains limited.
- **Explainability as a trust factor: -** Students tend to place greater trust in AI systems that provide transparent explanations, yet they often lack the critical training to interrogate biases, data reliability, and contextual relevance of these outputs.

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- **Generative AI's double-edged role: - Large** language models (LLMs) are widely used by both students and faculty for brainstorming, simulations, and drafting tasks. While they open new opportunities for decision-making practice, they also risk creating dependency and weakening critical thinking if not structured properly.
- **Uneven institutional adoption: -** Larger and well-resourced universities have been more successful in embedding AI across curricula, while smaller institutions often remain at the pilot stage. This highlights disparities in access, training, and strategic vision across institutions.
- **Ethical and practical concerns: -** Both students and faculty express concerns about bias, fairness, and overreliance on AI tools. Ethical awareness and responsible usage are still underdeveloped in many curricula.

Recommendations: -

- **Integrate AI literacy as a core competency: -** Business schools should embed AI-related modules into commerce and MBA programs, not as optional add-ons but as core components of managerial training.
- **Redesign assessments to emphasize reasoning: -** Instead of grading only polished outputs, institutions should evaluate process-oriented tasks such as reflective journals, or oral defenses, or decision justifications. This ensures that AI serves as a partner in reasoning, not a shortcut.
- **Provide faculty training and institutional support: -**Universities must invest in upskilling faculty so they can confidently integrate AI tools into teaching. Institutional strategies should also ensure equal access to AI resources across large and small institutions.
- **Promote collaboration with industry and policy makers: -** Partnerships with businesses and policymakers can help design curricula that reflect real-world AI applications, while also addressing broader issues like employability and responsible innovation.
- **Embed ethical frameworks in curricula: -** Courses should include discussions and case studies on algorithmic bias, data privacy, and the social impact of AI, ensuring that future managers balance efficiency with fairness and accountability.

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Conclusion: -

The integration of Artificial Intelligence into commerce and MBA programs is no longer a futuristic concept but a present necessity for shaping competent business leaders. This study highlights that while AI tools such as dashboards, predictive models, and generative systems are making their way into management education, their true value lies not in the technology itself but in how effectively students and educators use them to support sound judgment. AI can uncover patterns, forecast trends, and generate insights, but bridging the gap between data-driven outputs and meaningful managerial decisions requires critical thinking, ethical awareness, and interpretive skills.

AI literacy in commerce and MBA education should be treated as a strategic competency, an essential skill that blends technical understanding with managerial judgment and ethical sensitivity. By rethinking teaching methods, assessments, and institutional policies, business schools can ensure that future managers are not just data consumers but thoughtful leaders capable of transforming AI-driven insights into meaningful, context-sensitive, and human-centered decisions.

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