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Challenges in Implementing Artificial Intelligence (AI) in the Research Area of Management Institutes

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Abstract:

Artificial Intelligence (AI) has proved to be a revolutionary force across a variety of study areas, having a major impact on research procedures, analysis of data, and decision-making in management education. Though it has immense capabilities, the application of AI in the research field of management institutions is still in its emerging stages. The current study aims to examine and outline the significant challenges faced by management institutions in implementing AI in their research work. The study targets significant areas, including infrastructure constraints, a shortage of technical skills, data accessibility and privacy issues, poor institutional support, ethical, and technology resistance. The faculty members and research scholars, from selected management institutes were provided with a structured questionnaire with a five-point Likert scale. The results are likely to demonstrate that a lack of infrastructure, reduced budgets, and no training programs are major interruptions to successful AI uptake in research. Furthermore, inadequate interdisciplinary research and clear-cut institutional policies are also major obstacles. The research emphasizes the importance of building capacity, policy design, and increased industry–academia cooperation to create an environment within which AI can be integrated into research. By overcoming these challenges, management institutes can use AI tools to improve the quality, accuracy, and innovation of research results, leading ultimately to more data driven and future oriented management education. The objective of the research are: 1) To assess the current level of awareness and adoption of AI tools among faculty and research scholars. 2) To evaluate the infrastructure and resource constrains in the organization.

Keywords: Research, Artificial Intelligence, Management Education, Infrastructure Constraints, Institutional Policies, Technical Skills, Data Privacy

Introduction

The integration of Artificial Intelligence (AI) into various sectors is reshaping industries globally and management education is no exception to it (Yadav & Shrawankar, 2025). The field of management education has evolved significantly over the years, and with the rise of digital transformation, Artificial Intelligence (AI) is increasingly being integrated into educational practices to reshape the way business leaders and managers are trained (Cantú-Ortiz, et al., 2020). Artificial Intelligence (AI) has emerged as a transformative force across academic disciplines, significantly reshaping research methodologies, data analysis capabilities, and evidence-based decision-making in management education (Han, Xiao, Sheng, & GuangtaoZhang, 2025). Artificial Intelligence has proved to be a revolutionary force across a variety of study areas, having a major impact on research procedures, data analysis, and decision-making in the area of management education (Edwards & Dwivedi, 2019). Though immensely capable, the application of AI in the research field of management institutions is still in its emerging stages.

Research in management education that incorporates artificial intelligence faces several distinct challenges. One major issue is the rapid pace of technological advancement, which often outstrips the ability of academic research to remain current and relevant. There are also significant concerns related to data availability, quality, and privacy, as AI-driven research relies heavily on large datasets that are often difficult to access due to ethical and institutional restrictions (Shoghli, Darvis, & Sadeghian, 2024). Additionally, a lack of technical expertise among management educators can hinder the effective integration and evaluation of AI tools in educational research. Methodological challenges arise in measuring the true impact of AI on learning outcomes, particularly in areas such as decision-making, leadership, and critical thinking (Chaparro-Banegas, Mas-Tur, & Roig-Tierno, 2024). Furthermore, ethical considerations—including algorithmic bias, transparency, and accountability—pose serious concerns when applying AI in management education research. These challenges underscore the need for interdisciplinary collaboration, robust ethical frameworks, and continuous capacity building to effectively leverage artificial intelligence in management education research.

Literature Review

(Burger, Kanbach, Kraus, Breier, & Corvello, 2023) observes, using AI in (management) research can significantly improve the objectivity and accuracy of the results when applied correctly. By adding an automated component to both the research initiation phase as well as the data analysis phase, we can reduce the potential for human error and achieve better reproducibility. While the current state of AI – generalized AI models in particular – is not where a researcher can trust the results blindly, they often hint in the right direction and uncover oversights. The ability to process data at a deeper level, as well as the ability to achieve faster results, makes AI a valuable tool in the field of research.

(Harry, 2023) explores the use of AI in education offers substantial benefits, including personalized learning that enhances student outcomes, and tools such as intelligent tutoring systems and automated grading that improve efficiency and feedback accuracy. However, challenges including privacy concerns, cost, bias, and the need for ethical considerations like accessibility and fairness exist. Despite these issues, AI's potential for better data analysis can support data-driven decisions in education management and promotion.

(Sain, Sain, & Serban, Implementing Artificial Intelligence in Educational Management Systems: A Comprehensive Study of Opportunities and Challenges, 2024) explores the advantages and disadvantages of AI implementation in academic management, with a focus on identifying the opportunities, challenges, and ethical concerns associated with its use.

(Cook & Cook, 2024) highlights key areas where AI is advancing in education, such as tutoring systems, automated feedback on student work, AI-driven lesson planning, and predicting student dropout risks. It also notes growing concerns about the absence of clear ethical guidelines for using these AI technologies.

(Sok & Heng, 2024) study focuses on the opportunities, challenges, and strategies for using ChatGPT in higher education. ChatGPT offers a variety of opportunities for higher education, including assessment innovation, instructional support, remote learning support, research design and development support, academic writing support, and administrative assistance and productivity. However, ChatGPT also presents a number of challenges and issues related to academic integrity, security and privacy, reliance on artificial intelligence, learning assessment, and information accuracy.

Summary of Literature Review:

There is a notable gap in research regarding the effective and responsible use of AI within research activities themselves. While AI tools are increasingly applied across disciplines for data analysis, automation, and pattern detection, far fewer studies critically examine how researchers integrate these tools, what methodological biases AI may introduce, or how AI-driven workflows reshape research design and interpretation. Existing literature often focuses on AI's capabilities rather than its epistemological implications, leaving questions about transparency, reproducibility, and researcher skill gaps insufficiently explored. This lack of systematic inquiry creates uncertainty about best practices, ethical standards, and the long-term impact of AI on the integrity and evolution of scientific research.

The objectives of the research are:

The current study aims to assess the levels of awareness and the adoption and use of AI tools in research among faculty and research scholars. It is also intended to evaluate the infrastructure and resource constraints and AI-related ethical, privacy, and accuracy concerns. It also attempts to identify and outline significant challenges that the management institutions face in the integration of AI into their research work. Infrastructure constraints, shortage of technical skills, data accessibility, and privacy issues, poor institutional support, ethical issues, and resistance to technology are the major areas the study will target. A structured questionnaire on a five-point Likert scale was administered to faculty members and research scholars of management institutes. The findings are expected to reveal that inadequate infrastructure, reduced budgets, and the absence of training programs are major disruptors of successful AI acceptance in research. Inadequate interdisciplinary research and clear-cut institutional policies are also some of the challenges. The objectives of this research are-

1) To assess the level of awareness and adoption of AI tools among faculty and research scholars.
2) To assess the infrastructure and resource constraints in the organisation.

Research Methodology:

The quantitative research design is used in the study. The primary data is gathered using a structured questionnaire that employs five-point Likert scale. The sample included research scholars and faculty members from chosen management institutes. The study was designed to measure awareness, adoption, institutional constraints, policy issues, and ethical concerns related to AI usage. The multiple regression analysis was applied to identify the predictive effect of infrastructure, policy, and capacity-building on AI adoption. All necessary regression assumptions were checked and met, including linearity, independence, homoscedasticity, multicollinearity, and normality.

Results

Multiple regression analyses were performed to determine how much INF, POL, and CB predict AI. Before the analysis, the regression assumptions of linearity, independence of errors, homoscedasticity, multicollinearity and residuals normality were checked and deemed in order. The analysis was performed with AI as the outcome variable, while INF, POL and CB were the predictors. The results of the regression model, the ANOVA table, and the estimates of the coefficients as well as commentary on their meaning, are included in what follows.

Table 1: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin–Watson
1	.219	.048	.034	.51410	2.137

From the Model Summary, the regression model demonstrates a weak positive relationship, with a value of R = .219. This demonstrates a weak, positive relationship between the independent variables (INF, POL, and CB) and the dependent variable (AI). R Square demonstrates that the regression model only explains 4.8 percent of the variance in AI. During the analysis, the value of adjusted R square is .034, and this value demonstrates the model continues to have value when it is adjusted for the number of predictors. The value of .51410 for standard error of estimate shows that there is dispersion of sample values in relation to the regression line. Lastly, the value of 2.137 for Durbin-Watson indicates that there is no autocorrelation of the residuals, and therefore, this regression model meets this assumption.

Table 2: ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	2.802	3	.934	3.534	.016
Residual	55.502	210	.264		
Total	58.304	213			

ANOVA shows that it is statistically significant. The model shows that the predictors in the model, INF, POL, and CB, in aggregate, do have a significant impact in predicting AI and that the model is statistically better than would be predicted purely from chance. This verifies the inclusion of the predictors into the regression model. This indicates that the predictors do explain a portion of the variance in AI.

Table 3: Coefficients

Predictor	B	Std. Error	Beta	T	Sig.	Tolerance	VIF
(Constant)	4.242	.297	—	14.271	.000	—	—
POL	.126	.058	.146	2.167	.031	.998	1.002

Predictor	B	Std. Error	Beta	T	Sig.	Tolerance	VIF
INF	.007	.056	.009	.129	.898	.992	1.008
CB	.148	.063	.160	2.370	.019	.993	1.007

Insights from the Coefficients table explain the contribution of each individual factor on the dependent variable, AI. POL positively affects AI ($\beta = .146$, $t = 2.167$, $p = .031$) in the sense that an increase in POL leads to an increase on AI. In the same fashion, AI is also positively influenced by CB ($\beta = .160$, $t = 2.370$, $p = .019$) where higher level of CB leads to higher AI. Also, INF is not statistically significant ($\beta = .009$, $t = .129$, $p = .898$) meaning that this factor has no meaningful contribution with the other variables. Furthermore, Tolerance and VIF values show the absence of multicollinearity, thus affirming the adequacy of coefficient estimates.

Data Analysis:

The regression analysis shows that the model has a weak but positive relationship between the predictors and AI, explaining just a meager proportion of the variance. While the R Square value is low, results from ANOVA confirm that the overall model is statistically significant. Among the predictors, POL and CB have meaningful positive effects on AI, showing that both factors are significant in predicting the levels of AI. On the other hand, INF does not show a significant influence, which justifies its limited role in this model. Also, all the assumptions of regression such as linearity, independence, homoscedasticity, normality, and multicollinearity were met, hence justifying the reliability of the results. All in all, the model suggests that while POL and CB are relevant predictors of AI, additional variables may be necessary to increase predictive strength.

Conclusion:

The study concludes that, while management institutes appreciate the potential of AI for improvement in research quality, challenges are present to make its adoption limited. Regression analysis shows that institutional policies (POL) and capacity-building (CB) significantly positively affect the adoption of AI, indicating supportive policy and training programs enhance AI usage. On the contrary, infrastructure does not significantly influence the adoption of AI, suggesting that technological readiness itself is not sufficient without human capability and institutional support. The model explains a very small portion of variance, indicating that additional organizational and personal factors may play a major role. Overall, the study sums up that there is a need for stronger institutional policies, enhanced training, and cross-disciplinary collaboration. Addressing these barriers will allow management institutes to tap into AI to make research stronger on the dimensions of accuracy, innovation, and quality.

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