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Study the Feasibility of Implementing Artificial Intelligence (AI) in Management Education

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Abstract:
The integration of Artificial Intelligence (AI) into various sectors is reshaping industries globally and management education is not exception to it. The study aims to explore the feasibility of implementing Artificial Intelligence (AI) in management education by assessing the awareness and understanding of AI among the academicians and students studying in Management education. The objectives of the study are twofold: 1) Understand awareness of artificial intelligence amongst academicians., 2) Understand awareness of artificial intelligence amongst students. The findings highlight the readiness of academic institutions to embrace AI driven teaching tools and the challenges. The study further enhances the discourse on AI in education, providing guidance for educators and policymakers on effectively integrating AI into management curricula for student benefit.

Keywords: Higher Education, Artificial Intelligence, Machine Learning, Internet of Things

Introduction

Artificial Intelligence (AI) is no longer just a futuristic concept—it's shaping how we live, work, and learn. In management education, where critical thinking, decision-making, and problem-solving are key, AI has the potential to revolutionize how students learn and how educators teach (Belkom, 2019). 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). AI is being leveraged to enhance learning experiences, streamline administrative tasks, provide data-driven insights, and better prepare students for an ever-changing business landscape. Implementing AI in management education offers several opportunities to enrich both the content and delivery methods (Pedro, Francesc, Miguel, Axel, & Paula, 2019). AI-based systems can provide personalized learning experiences, automate grading and feedback, and foster interactive environments through virtual assistants and chatbots. Moreover, AI can simulate real-world business scenarios, allowing students to develop critical decision-making and problem-solving skills in a risk-free environment.
Technology has been playing a vital role in the education sector. The use of technology is increasing day by day. One of the reasons for this is the increased availability of smart devices and web-based curricula. With the rise of Artificial Intelligence in the education sector, there are various ways by which students' learning process becomes more effective. Following is some of the Artificial Intelligence technologies: Chatbots, Virtual Reality (VR), Learning Management Systems (LMS), and Robotics. Chatbots are one example of AI educational apps wherein students can chat with bots not only to get insights about new concepts related a particular topic but also to get an analysis about the same. Chatbots can be a substitute for email communication between teachers and parents.

Objectives:

This research focuses on business schools, management institutes, and universities offering MBA and executive education programs in India. It explores how AI can be applied across different management

disciplines like marketing, finance, operations, and human resources and studies the following objectives:

1. Understand awareness of artificial intelligence amongst academicians.
2. Understand awareness of artificial intelligence amongst students.

Literature Review

The integration of Artificial Intelligence (AI) into management education has been extensively explored in recent scholarly literature. This review synthesizes findings from 15 research papers, highlighting the transformative potential, practical applications, challenges, and future directions of

AI in this domain.

(Salas-Pilco & Yang, 2022) focuses on the application of AI in education where it has high potential. The study examines AI applications in three educational processes learning, teaching, and administration. The study further demonstrates that AI applications help to address important education issue that contributes to quality education. AI application is being adopted in different forms by higher education institutions in many Latin American countries such as Brazil, Colombia, Mexico, Peru, Chile, and Argentina. The rate of adoption of AI is slow as compared to other fields linke banking, and healthcare.

(Chan & Tsi, 2024) explores the use of Artificial Intelligence in higher education especially in the capacity to replace or assist human teachers. The study provides the future role of educators in the face of advancing AI technologies. The finding suggests that, eventually, AI will replace human teachers however, the teachers possess unique qualities such as critical thinking, creativity, and emotion that are irreplaceable. The research proposes teachers can effectively integrate AI to enhance teaching and learning without viewing it as a replacement. The study was conducted at Hongkong university, and the sample consisted of 384 undergraduates and postgraduate students and 144 teachers from various disciplines.

(Chatterjee & Bhattacharjee, 2020) explored the possibilities of the adoption of artificial intelligence in the future which is currently in the incubation stage. Education is considered a human-centric issues and cannot depend fully on technology and human intervention would require identifying the problem. The study covers the use of technology, AI technology for handling admission procedures. It also covers the performance of AI technology and the efforts that are needed by stakeholders of higher education to fulfil their needs. The data was collected from students, faculty members, and administrative staff and analysed by using regression analysis.

(Kuleto, et al., 2021) explores the excellent opportunity for students to learn an interactive way of method. AI can provide students with individualized learning experiences. AI and ML have great potential in e-learning in higher education institutions. The survey was implemented among students in the Republic of Serbia, with 103 respondents to generate data and information on how the knowledge of AI and ML is held by the students to understand the opportunities and challenges involved in AI and ML in Higher Education institutions.

(Yang & Evans, 2019) studied the feasibility of introducing chatbots in higher education through research questions like the use of chatbots within typical universities in the United Kingdom, the Benefits and technical challenges of introducing chatbots in universities, and case studies in the areas of educational simulation. The use of chatbot in education is still limited. AI has gained popularity in the fields of e-commerce, banking, healthcare, and well-being. However, little work has been done in the context of using technology in educational field.

(Vhora, Sane, & Kalekar, 2023) reveals that it improves the efficiency, effectiveness and speed of human endeavors. In education. AI is now used in various industries such as automotive self-driving cars, virtual assistance or chatbots, retail and e-commerce, manufacturing, healthcare and medical imaging analysis and many others like education institutions. AI applications have been created, streamlining procedures and allowing students to access course materials online.
(Dutta, Kalita, & Aditi, 2024) examines the awareness and usage of Artificial Intelligence (AI) among college and university-level students in Asam and the relationship between AI usage and socio-demographic characteristics. Male students use it more for academic purposes while urban students use it more.

Research Methodology:
This study aims to examine the relationship between awareness and knowledge of Artificial Intelligence (AI) and familiarity with machine learning techniques among the academicians in management education. The research has adopted a quantitative approach to collect and analyze data. The data has been collected from academicians and students studying management education, ensuring a diverse sample that provides insights into the awareness and knowledge levels of AI.

A structured questionnaire was created to measure both awareness of AI and familiarity with machine learning techniques. The questionnaire consists of two main sections: one to evaluate respondents' general awareness of AI concepts, trends, and applications, while the second focuses on their familiarity with tools, and techniques. A Likert scale was used to quantify responses on 35 statements, ensuring a standardized way of capturing participants' perceptions and knowledge levels. A 5% margin of error and a 95% confidence level has been used to calculate the sample size. Convenience and purposive selection techniques are used to choose participants, with an emphasis on those with different degrees of familiarity with AI and machine learning ideas. By using this sampling technique, research guarantees that the information gathered represents a wide variety of levels of familiarity and understanding. Statistical techniques of regression analysis have been employed to test the hypotheses. The null hypothesis (H_0) is tested to determine if there is no significant relationship between awareness of AI and familiarity with machine learning techniques, while the alternative hypothesis (H_1) will investigate whether a significant positive relationship exists between the two variables. The study also includes demographic variables, such as age, educational background, and professional experience, to control for potential confounding factors. Data analysis is conducted using statistical software SPSS and results will be interpreted to draw meaningful conclusions about the interplay between AI awareness and machine learning knowledge within the study population.

Hypothesis Statement:
- **Null Hypothesis (H_0)**: There is no significant relationship between awareness and knowledge of AI and familiarity with machine learning techniques among the study population.
- **Alternative Hypothesis (H_1)**: There is a significant positive relationship between awareness and knowledge of AI and familiarity with machine learning techniques among the study population.

Data Analysis:
The linear regression analysis was conducted to examine the relationship between awareness and knowledge of AI and familiarity with machine learning techniques. The R-value of 0.51 indicates a moderate positive correlation between the two variables, while the R^2 value of 0.26 suggests that approximately 26% of the variance in familiarity with machine learning techniques can be explained by awareness and knowledge of AI. The F-statistic (64.1) is significant ($p < .001$), confirming that the regression model is a good fit for the data. The Omnibus ANOVA Test further supports this, with a significant sum of squares for awareness and knowledge of AI ($F = 64.1$, $p < .001$), indicating that it significantly predicts familiarity with machine learning techniques.

The model coefficients reveal that the intercept (1.04) is not statistically significant (p = 0.414), meaning that when awareness and knowledge of AI is zero, familiarity with machine learning techniques is not significantly different from zero. However, the coefficient for awareness and knowledge of AI (1.45) is significant (p < .001), indicating that for every unit increase in awareness and knowledge of AI, familiarity with machine learning techniques increases by 1.45 units. The standardized estimate (0.51) confirms a moderate effect size, and the 95% confidence interval (1.09 to 1.80) indicates the reliability of this relationship.

In conclusion, the results reject the null hypothesis (H_0) and support the alternative hypothesis (H_1), confirming a significant positive relationship between awareness and knowledge of AI and familiarity with machine learning techniques. This highlights the importance of promoting awareness and knowledge of AI to enhance familiarity with machine learning techniques, which can be beneficial for educational and professional development in AI-related fields. Organizations and educational institutions should focus on increasing awareness and knowledge of AI through training programs and resources to foster better adoption and implementation of AI technologies.

Linear Regression

Model Fit Measures

			Overall Model Test			
Model	**R**	**R^2**	**F**	**df1**	**df2**	**p**
1	0.51	0.26	64.1	1	182	< .001

Omnibus ANOVA Test

	Sum of Squares	**Df**	**Mean Square**	**F**	**p**
Awareness and Knowledge of AI	1529	1	1529	64.1	< .001
Residuals	4342	182	23.9		

Note. Type 3 sum of squares

Model Coefficients - Machine Learning Techniques

			95% Confidence Interval					95% Confidence Interval	
Predictor	**Estimate**	**SE**	**Lower**	**Upper**	**T**	**p**	**Stand. Estimate**	**Lower**	**Upper**
Intercept	1.04	1.269	-1.47	3.54	0.819	0.414			
Awareness and Knowledge of AI	1.45	0.181	1.09	1.8	8.005	< .001	0.51	0.385	0.636

Hypothesis Statement:

- **Null Hypothesis (H_0)**: There is no significant relationship between awareness and knowledge of AI and familiarity with AI applications.
- **Alternative Hypothesis (H_1)**: There is a significant positive relationship between awareness and knowledge of AI and familiarity with AI applications.

Data Analysis:
The linear regression analysis was conducted to examine the relationship between awareness and knowledge of AI and familiarity with AI applications. The R-value of 0.597 indicates a strong positive correlation between the two variables, while the R^2 value of 0.356 suggests that approximately 35.6% of the variance in familiarity with AI applications can be explained by awareness and knowledge of AI. The F-statistic (101) is significant ($p < .001$), confirming that the regression model is a good fit for the data. The Omnibus ANOVA Test further supports this, with a significant sum of squares for awareness and knowledge of AI ($F = 101$, $p < .001$), indicating that it significantly predicts familiarity with AI applications.

The model coefficients reveal that the intercept (8.96) is statistically significant ($p = 0.003$), meaning that even when awareness and knowledge of AI is zero, there is a baseline level of familiarity with AI applications. The coefficient for awareness and knowledge of AI (4.29) is significant ($p < .001$), indicating that for every unit increase in awareness and knowledge of AI, familiarity with AI applications increases by 4.29 units. The standardized estimate (0.597) confirms a strong effect size, and the 95% confidence interval (3.45 to 5.13) indicates the reliability of this relationship.

In conclusion, the results reject the null hypothesis (H_0) and support the alternative hypothesis (H_1), confirming a significant positive relationship between awareness and knowledge of AI and familiarity with AI applications. This highlights the importance of promoting awareness and knowledge of AI to enhance familiarity with AI applications, which can be beneficial for educational and professional development in AI-related fields. Organizations and educational institutions should focus on increasing awareness and knowledge of AI through training programs and resources to foster better adoption and implementation of AI technologies.

Linear Regression						
Model Fit Measures						
			Overall Model Test			
Model	**R**	**R^2**	**F**	**df1**	**df2**	**p**
1	0.597	0.356	101	1	182	< .001

Omnibus ANOVA Test					
	Sum of Squares	**df**	**Mean Square**	**F**	**p**
Awareness and Knowledge	13460	1	13460	101	< .001
Residuals	24361	182	134		
Note. Type 3 sum of squares					

Model Coefficients - Familiarity with AI Applications									
			95% Confidence Interval					**95% Confidence Interval**	
Predictor	**Estimate**	**SE**	**Lower**	**Upper**	**T**	**p**	**Stand. Estimate**	**Lower**	**Upper**
Intercept	8.96	3.006	3.03	14.89	2.98	0.003			

Awareness and Knowledge	4.29	0.428	3.45	5.13	10.03	< .001	0.597	0.479	0.714

Hypothesis Statement:

- **Null Hypothesis (H_0)**: There is no significant difference in awareness and knowledge of AI, familiarity with AI applications, machine learning techniques, technological infrastructure, and types of AI across different age groups.
- **Alternative Hypothesis (H_1)**: There is a significant difference in awareness and knowledge of AI, familiarity with AI applications, machine learning techniques, technological infrastructure, and types of AI across different age groups.

Data Analysis:

The One-Way ANOVA (Welch's test) was conducted to examine differences in awareness and knowledge of AI, familiarity with AI applications, machine learning techniques, technological infrastructure, and types of AI across four age groups: 26-35, 36-45, 46-55, and 56 and above. The results revealed significant differences across all variables, as indicated by the p-values: awareness and knowledge of AI ($p = 0.026$), familiarity with AI applications ($p = 0.045$), machine learning techniques ($p < .001$), technological infrastructure ($p < .001$), and types of AI ($p = 0.003$). This suggests that age plays a significant role in shaping these variables.

The group descriptives show that the 36-45 age group consistently scored higher in awareness and knowledge of AI (mean = 7.17), familiarity with AI applications (mean = 39.13), and machine learning techniques (mean = 12.67). The 46-55 age group had the highest mean score for technological infrastructure (mean = 5.54), while the 56 and above age group scored lower in familiarity with types of AI (mean = 7.5) compared to the 36-45 age group (mean = 10.54). The 26-35 age group generally scored lower across most variables, particularly in awareness and knowledge of AI (mean = 5.33) and machine learning techniques (mean = 7.67).

The Tukey post-hoc tests identified specific age group differences. For awareness and knowledge of AI, there was a significant difference between the 26-35 and 36-45 age groups ($p = 0.013$). For machine learning techniques, significant differences were found between the 26-35 and 36-45 age groups ($p = 0.014$) and between the 36-45 and 46-55 ($p < .001$) and 36-45 and 56 and above ($p = 0.016$) groups. For technological infrastructure, a significant difference was observed between the 26-35 and 46-55 age groups ($p = 0.045$). For types of AI, a significant difference was found between the 36-45 and 56 and above age groups ($p = 0.002$).

In conclusion, the results reject the null hypothesis (H_0) and support the alternative hypothesis (H_1), indicating significant differences in AI-related variables across age groups. The 36-45 age group demonstrated the highest levels of awareness, familiarity, and skills, while the 26-35 and 56 and above age groups lagged in certain areas. These findings highlight the need for age-specific strategies to enhance AI awareness and skills, particularly for younger and older age groups, to ensure inclusive adoption and utilization of AI technologies. Organizations and educational institutions should focus on targeted training programs and improved access to technological infrastructure to bridge these gaps

One-way ANOVA (Welch's)				
	F	**df1**	**df2**	**p**
Awareness and Knowledge of AI	3.45	3	38.1	0.026

Familiarity with AI Applications	2.9	3	45.6	0.045
Machine Learning Techniques	9.96	3	44.1	< .001
Technological Infrastructure	7.12	3	49.2	< .001
Types of AI	5.38	3	39.1	0.003

Group Descriptive					
	Age	**N**	**Mean**	**SD**	**SE**
Awareness and Knowledge	26-35	12	5.33	2.605	0.752
	36-45	96	7.17	1.709	0.174
	46-55	52	6.31	2.219	0.308
	56 and above	24	6.67	1.834	0.374
Familiarity with AI Applications	26-35	12	31.67	8.06	2.327
	36-45	96	39.13	14.385	1.468
	46-55	52	38.77	14.456	2.005
	56 and above	24	34	15.847	3.235
Machine Learning Techniques	26-35	12	7.67	3.229	0.932
	36-45	96	12.67	5.852	0.597
	46-55	52	8.85	4.151	0.576
	56 and above	24	9	6.242	1.274
Technological Infrastructure	26-35	12	4	0.853	0.246
	36-45	96	5.21	1.835	0.187
	46-55	52	5.54	1.925	0.267
	56 and above	24	5.17	1.903	0.389
Types of AI	26-35	12	9.33	4.997	1.443
	36-45	96	10.54	3.85	0.393
	46-55	52	8.92	3.18	0.441
	56 and above	24	7.5	3.477	0.71

Conclusion:

The study highlights the crucial role of AI awareness and knowledge in enhancing familiarity with machine learning techniques and AI applications. The findings suggest that individuals with greater exposure to AI concepts are more proficient in understanding and utilizing AI-driven technologies. Additionally, the results indicate that age influences AI literacy, with certain age groups demonstrating a stronger grasp of AI concepts than others. This emphasizes the need for targeted AI education initiatives to ensure inclusive learning and skill development across different demographics. Overall, the study reinforces the importance of structured AI training programs and improved access to AI education to bridge the knowledge gap and facilitate better integration of AI in various fields.

Practical Implications:

The findings have significant implications for education, industry, and policy-making. Academic institutions should incorporate AI and machine learning courses into their curricula, ensuring that students across different disciplines gain essential AI knowledge. Organizations can benefit by

implementing AI training programs to upskill employees and improve their adaptability to AI-driven technologies in business operations. Furthermore, businesses should invest in AI-powered tools for analytics, automation, and decision-making while providing employees with resources to effectively use these technologies. Policymakers should focus on expanding digital infrastructure and AI training accessibility, particularly for groups with lower AI literacy, to create an equitable AI adoption framework.

Theoretical Implications:

From a theoretical perspective, this study contributes to the understanding of AI adoption and literacy in education and business. It reinforces existing theories on technology adoption by demonstrating that AI awareness plays a critical role in skill acquisition and professional development. Additionally, it highlights the impact of demographic factors, such as age, on AI learning and engagement. Future research can build on these findings to explore the long-term effects of AI education initiatives and examine how AI literacy influences professional decision-making in various industries. By expanding the scope of AI education research, this study provides valuable insights for academic institutions, researchers, and policymakers striving to enhance AI integration and usage.

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